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Urbana, IL

Prepared for

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A BASELINE ASSESSMENT OF COAL INDUSTRY STRUCTURE IN THE OHIO RIVER BASIN ENERGY STUDY REGION

By

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Prepared for

Ohio River Basin Energy Study (ORBES)

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This analysis is in support of the Ohio River Basin Energy Study (ORBES), a multidisciplinary policy research program supported by the Environmental Protection Agency. Detailed information is provided on coal production and employment by county, the consumption and distribution of coal, the ownership structure of the coal industry, coal land and mineral ownership, operator associations and unions in the coal industry, and projections of coal development. The emphasis is on the six ORBES states (Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia), but information also is provided on the coal industry in the other eastern states and the western states when relevant. An appendix, "County Coal Profiles," provides detailed information by county in tabular form.

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Combustion	Integrated Assessments	
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FOREWORD

The Ohio River Basin Energy Study (ORBES) is an interdisciplinary, multi-university inquiry into the environmental, economic, and social impacts of energy facility development in a major portion of the Ohio River Basin. The study was initiated by the U.S. Environmental Protection Agency in 1976 in response to a directive from the U.S. Senate Appropriations Committee.

Most of the ORBES research was conducted by a group of faculty members at the University of Illinois, Indiana University, the University of Kentucky, the University of Louisville, The Ohio State University, the University of Pittsburgh, Purdue University, and West Virginia University. In a few instances, the necessary expertise was found at other universities or independent research organizations.

This report is one of a series produced in support of the overall ORBES assessment. For a summary of the entire study, see Ohio River Basin Energy Study (ORBES): Main Report, by the ORBES Core Team, also being published by the U.S. Environmental Protection Agency.

PREFACE

This is the final report of work completed on a subcontracted support study by the Appalachian Center at the University of Kentucky for the Ohio River Basin Energy Study, a multiuniversity project supported by grants from the U.S. Environmental Protection Agency. David S. Walls and Dwight B. Billings served as principal investigators. Mary P. Payne served as research associate, and Joe F. Childers, Jr. served as research assistant.

This study was designed to provide the ORBES Core Team with baseline data on the coal industry for use in Phase II of the overall ORBES study. We provide detailed information on coal production and employment by county, the consumption and distribution of coal, the ownership structure of the coal industry, coal land and mineral ownership, operator associations and unions in the coal industry, and projections of coal development. While concentrating on the six ORBES states, we have also provided information on the coal industry in the other eastern states and the western states when relevant.

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We owe a debt of thanks to all the people too numerous to mention in government, industry, labor, academic and public interest organizations who provided information to us. We have enjoyed the assistance and support given by the two people who served as Core Team Coordinators for our project, Sue Johnson of the Center for Developmental Change and Donald Blome of the Institute for Mining and Mineral Research of the University of Kentucky. We extend a special appreciation to Francene Nash of the Appalachian Center, who helped design the tables and typed the final copy of this report.

CONTENTS

Page

Preface iv
Figures ix
Tables x
Appendix Contents xvii
Highlights xviii

1. INTRODUCTION TO THE COAL INDUSTRY IN THE UNITED STATES

Historical Perspectives on Coal 1
Coal Deposits and Regional Production 3
Employment and Technological Change 3
The Consumption of Coal 6
Exports and Imports 8
Coal Resources and Reserves 9
References 10

2. THE ORBES STATES IN THE CONTEXT OF THE NATIONAL COAL INDUSTRY

Production and Employment 12
Productivity 19
Workforce Characteristics 22
Reserves 27
References 31

3. COAL PRODUCTION AND EMPLOYMENT BY COUNTY IN THE EASTERN STATES

The ORBES States 32
Illinois 34
Indiana 40
Kentucky 43
Eastern Kentucky 45
Western Kentucky 54
Ohio 61
Pennsylvania 69
West Virginia 77
The Non-ORBES Eastern States 87
Alabama 89
Georgia 89
Maryland 95
Tennessee 95
Virginia 99
Secondary and Indirect Employment 103
References 105

Page

4. COAL CONSUMPTION AND DISTRIBUTION

Coal Consumption in the United States 107
Coal Consumption in the ORBES States 107
Distribution of Coal Produced in the Eastern States 113
Distribution of Coal Produced in the Western States 123
Western Coal in Eastern Markets 126
References 131

5. OWNERSHIP STRUCTURE OF THE COAL INDUSTRY

Oligopoly and Competitive Sectors 132
Concentration and Competition 133
Leading Coal Producing Groups in the Eastern States 139
Coal Industry Structure in the ORBES States 142
Illinois 143
Indiana 145
Western Kentucky 146
Eastern Kentucky 146
Ohio 149
Pennsylvania 149
West Virginia 152
Coal Industry Structure in the Non-ORBES Eastern States 152
Alabama 155
Virginia 155
Structure and Performance in the Coal Industry 157
References 160

6. COAL LAND AND MINERAL OWNERSHIP

The Ownership Pattern 163
Illinois 164
Kentucky 169
West Virginia 172
Tennessee 179
Virginia 179
Impacts of Land and Mineral Ownership Patterns 179
References 190

7. COAL OPERATOR ASSOCIATIONS

Introduction 193
Types of Coal Operator Associations 193

Page

National Coal Operator Associations 194
    National Coal Association 195
    American Mining Congress 195
    Bituminous Coal Operators Association 197
    National Independent Coal Operators Association 202
    Mining and Reclamation Congress of America 205
Associations in the ORBES States 206
Illinois 206
    Illinois Coal Association 206
    Coal Producers Association of Illinois 207
Indiana 207
    Indiana Coal Association 207
Kentucky 207
    Kentucky Coal Association 207
    Hazard Coal Operators Association 208
    Kentucky Independent Coal Producers Association 209
    Coal Operators and Associates 209
    Harlan County Coal Operators Association 210
    Knott-Letcher-Perry Independent Coal Operators Association 210
    West Kentucky Coal Operators Association 211
    Kentucky-Tennessee Coal Operators Association 211
    Clay County Independent Coal Operators and Associates 212
    Leslie-Clay Coal Producers Association 212
    Kentucky Surface Mining and Reclamation Association 212
    Big Sandy-Elkhorn Coal Operators Association 213
    Highlands Coal Association 213
Ohio 213
    Ohio Mining and Reclamation Association 213
    Ohio Valley Coal Operators Association 214
Pennsylvania 214
    Keystone Bituminous Coal Association 214
    Pennsylvania Coal Mining Association 215
    Central Pennsylvania Coal Producers Association 215
    Western Pennsylvania Coal Operators Association 216
    Western Pennsylvania Surface Coal Mine Operators Association 216
    Pennsylvania Chapter of NICOA 216

Page

West Virginia 217
West Virginia Coal Association 217
West Virginia Surface Mining and Reclamation Association 217
Kanawha Coal Operators Association 218
Logan Coal Operators Association 218
Other BCOA Affiliates in West Virginia 219
West Virginia Chapter of NICOA 219
Associations in the Non-ORBES Eastern States 219
Alabama 220
Alabama Mining Institute 220
Alabama Surface Mining Reclamation Council 220
Maryland 221
Western Maryland Coal Owners and Operators Association 221
Tennessee 221
Facts About Coal in Tennessee 221
Virginia 221
Virginia Coal Association 221
Virginia Surface Mining and Reclamation Association 222
Tri-County Coal Operators Association 222
Associations in the Western States 223
References 224

8. UNIONS IN THE COAL INDUSTRY

The Development of Coal Miners' Unions in the United States 226
The Rise of the United Mine Workers of America 226
The Organizational Structure of the UMWA 232
Progressive Mine Workers of America 240
Southern Labor Union 241
Other Unions 242
References 243

9. PROJECTIONS AND IMPACTS OF INCREASED COAL PRODUCTION

Projected Demand for Coal 249
Social and Economic Impacts of Coal Production 264
References 267

APPENDIX: COUNTY COAL PROFILES 271

FIGURES

Number		Page
1-1	Bituminous and subbituminous coal and lignite fields of the conterminous United States	4
1-2	U.S. consumption of coal, 1934-1974, by consumer group	7
1-3	Coal's share of steam electric utility fossil fuel market (on a Btu basis), 1977	8
2-1	ORBES Region, Phase II.	13
2-2	Age distribution of UMWA working miners	26
3-1	Illinois total county coal production, 1976	35
3-2	Indiana total county coal production, 1976	41
3-3	Kentucky total county coal production, 1976	44
3-4	Ohio total county coal production, 1976	62
3-5	Pennsylvania total county coal production, 1976	70
3-6	West Virginia total county coal production, 1976	78
3-7	Alabama total county coal production, 1976	90
3-8	Tennessee total county coal production, 1976	96
3-9	Virginia total county coal production, 1976	100
4-1	Coal distribution by transportation mode and end use	108
4-2	Bituminous coal producing districts as defined in the Bituminous Coal Act of 1937 and amendments	116
8-1	UMWA districts, western states	233
8-2	UMWA districts, eastern states	234
8-3	UMWA's share of U.S. bituminous coal production, by district	239

TABLES

Number		Page
1-1	Production, Employment and Productivity in the U.S. Bituminous Coal Industry, 1920-1976	5
2-1	Bituminous Coal and Lignite Production by State, 1976 and 1977	14
2-2	Bituminous Coal Production and Employment, Eastern States, By Region, 1976	16
2-3	Bituminous Coal and Lignite Production and Employment, Western States, By Region, 1976	17
2-4	Production and Value of Bituminous Coal and Lignite by State, 1976	18
2-5	Productivity: Persons Working Daily, Days Worked and Output Per Person Per Day, Eastern States, 1976	20
2-6	Productivity: Persons Working Daily, Days Worked and Output Per Person Per Day, Western States, 1976	21
2-7	Black Coal Mine Employees, Eastern States, 1970	23
2-8	Women Employed in Coal Mining, U.S., 1973-78	25
2-9	Coal Reserve Base, U.S., January 1, 1974	28
2-10	Reserve Base of Identified Premium-Grade Bituminous Coals with a Potential for Coke, January, 1974	29
3-1	Coal Mines, Production, and Employees, Surface and Underground, ORBES States, 1976	33
3-2	Illinois Coal Mines, Production, and Employees, Underground and Surface, By County, 1976	36
3-3	Illinois Coal Production and Employment, Ranked by County Production, 1976	37
3-4	Illinois Coal Mines, Production and Employees, Underground and Surface, By County, 1977	38
3-5	Illinois Coal Production and Employment, Ranked by County Production, 1977	39
3-6	Indiana Coal Production, Ranked by County, 1976	42
3-7	Eastern Kentucky Coal Mines, Production, and Employees, Underground and Surface, By County, 1976	46

Number		Page
3-8	Eastern Kentucky Coal Production and Employment, Ranked by County Production, 1976	48
3-9	Eastern Kentucky Coal Mines, Production, and Employees, Underground and Surface, by County, 1977	49
3-10	Eastern Kentucky Coal Production and Employment, Ranked by County Production, 1977	51
3-11	Eastern Kentucky County Mining Employment, 1976	52
3-12	Eastern Kentucky County Mining and Quarrying Payroll and Average Weekly Salary, 1976	53
3-13	Western Kentucky Coal Mines, Production, and Employees, Underground and Surface, by County, 1976	55
3-14	Western Kentucky Coal Production and Employment Ranked by County Production, 1976	56
3-15	Western Kentucky Coal Mines, Production and Employees, Underground and Surface, by County, 1977	57
3-16	Western Kentucky Coal Production and Employment Ranked by County Production, 1977	58
3-17	Western Kentucky County Mining and Quarrying Employment, 1976	59
3-18	Western Kentucky County Mining and Quarrying Payroll and Average Weekly Salary, 1976	60
3-19	Ohio Coal Mines, Production, and Employees, Underground and Surface, by County, 1976	63
3-20	Ohio Coal Production and Employment Ranked by County Production, 1976	64
3-21	Ohio Coal Mines, Production, and Employees, Underground and Surface, by County, 1977	65
3-22	Ohio Coal Production and Employment Ranked by County Production, 1977	66
3-23	Ohio County Mining Employment, 1976	67
3-24	Ohio County Mining Payroll and Average Weekly Salary, 1976	68
3-25	Pennsylvania Bituminous Coal Mines, Production, and Employees, Underground and Surface, by County, 1976	71
3-26	Pennsylvania Bituminous Coal Production and Employment, Ranked by County Production, 1976	72

Number		Page
3-27	Pennsylvania Bituminous Coal Mines, Production, and Employees, Underground and Surface, By County, 1977	73
3-28	Pennsylvania Bituminous Coal Production and Employment, Ranked by County Production, 1977 . . .	74
3-29	Pennsylvania County Mining Employment, 1976	75
3-30	Pennsylvania County Mining Payroll and Average Weekly Salary for First Quarter, 1976	76
3-31	West Virginia Coal Mines, Production, and Employees, Underground and Surface, By County, 1976	79
3-32	West Virginia Coal Production and Employment, Ranked by County Production, 1976	81
3-33	West Virginia Coal Mines, Production, and Employees, Underground and Surface, By County, 1977	82
3-34	West Virginia Coal Production and Employment, Ranked by County Production, 1977	84
3-35	West Virginia County Mining Employment, 1976	85
3-36	West Virginia Mining Payroll and Average Weekly Salary, 1976	86
3-37	Coal Mines, Production, and Employees, Surface and Underground, Non-ORBES Eastern States, 1976	88
3-38	Alabama Coal Mines, Production, and Employees, Underground and Surface, by County, Fiscal Year 10/1/75 - 9/30/76	91
3-39	Alabama Coal Production and Employment Ranked by County Production, Fiscal Year 1975-76	92
3-40	Alabama Coal Mines, Production, and Employees, Underground and Surface, by County, Fiscal Year 10/1/76 - 9/30/77	93
3-41	Alabama Coal Production and Employment, Ranked by County Production, Fiscal Year 1976-77	94
3-42	Tennessee Coal Mines, Production, and Employees, Underground and Surface, by County, FY 1975-76 . . .	97
3-43	Tennessee Coal Production and Employment Ranked by County Production, FY 1975-76	98
3-44	Virginia Production and Employees, Underground and Surface, by County, 1976 and 1977	101

Number		Page
3-45	Virginia Coal Production and Employment Ranked by County Production, 1976	102
3-46	Virginia Coal Production and Employment Ranked by County Production, 1977	102
4-1	Amount of Bituminous Coal Shipped to ORBES States by Consumer Use, 1976	109
4-2	Sources of Coal Purchased by Utilities in Illinois 1976 and 1977	110
4-3	Sources of Coal Purchased by Utilities in Indiana 1976 and 1977	110
4-4	Sources of Coal Purchased by Utilities in Kentucky 1976 and 1977	111
4-5	Sources of Coal Purchased by Utilities in Ohio 1976 and 1977	111
4-6	Sources of Coal Purchased by Utilities in Pennsylvania, 1976 and 1977	112
4-7	Sources of Coal Purchased by Utilities in West Virginia, 1976 and 1977	112
4-8	Distribution of Bituminous Coal Produced in Eastern States by Consumer Use, 1976	115
4-9	Definition of Bituminous Coal and Lignite Producing Districts	117
4-10	Utility Purchases of Coal Produced in Illinois (District 10), 1976 and 1977	118
4-11	Utility Purchases of Coal Produced in Indiana (District 11), 1976 and 1977	118
4-12	Utility Purchases of Coal Produced in Eastern Kentucky (Part of District 8), 1976 and 1977	119
4-13	Utility Purchases of Coal Produced in Western Kentucky (District 9), 1976 and 1977	120
4-14	Utility Purchases of Coal Produced in Ohio (District 4), 1976 and 1977	120
4-15	Utility Purchases of Coal Produced in Eastern Pennsylvania (Part of District 1), 1976 and 1977	121
4-16	Utility Purchases of Coal Produced in Western Pennsylvania (District 2), 1976 and 1977	121
4-17	Utility Purchases of Coal Produced in Southern West Virginia (Part of Districts 7 & 8) 1976 and 1977	122

Number		Page
4-18	Utility Purchases of Coal Produced in Northern West Virginia (Part of Districts 1, 3 & 6), 1976 and 1977	122
4-19	Utility Purchases of Coal Produced in Alabama and Georgia (District 13), 1976 and 1977	124
4-20	Utility Purchases of Coal Produced in Maryland (District 1), 1976 and 1977	124
4-21	Utility Purchases of Coal Produced in Tennessee (Part of Districts 8 & 13), 1976 and 1977	125
4-22	Utility Purchases of Coal Produced in Virginia (Part of Districts 7 & 8), 1976 and 1977	125
4-23	Distribution of Bituminous Coal and Lignite Produced in Western States by Consumer Use, 1976	127
4-24	Utility Purchases of Coal Produced in Montana (District 22), 1976 and 1977	128
4-25	Utility Purchases of Coal Produced in Wyoming (District 19), 1976 and 1977	128
4-26	Utility Purchases of Coal Produced in Utah (District 20), 1976 and 1977	129
4-27	Utility Purchases of Coal Produced in Northern Colorado (District 16), 1976 and 1977	129
4-28	Utility Purchases of Coal Produced in Southern Colorado (District 17), 1976 and 1977	130
5-1	Concentration Ratios for Coal Production, U.S., 1950-1976	137
5-2	Top Coal Producing Companies in U.S., 1977	140
5-3	Percent of Underground and Surface Production, ORBES States, by National Companies, 1976	143
5-4	Top Coal Producers in Illinois, 1976	144
5-5	Top Coal Producers in Indiana, 1976	145
5-6	Top Coal Producers in Western Kentucky, 1976	147
5-7	Top Coal Producers in Eastern Kentucky, 1976	148
5-8	Top Coal Producers in Ohio, 1976	150
5-9	Top Coal Producers in Pennsylvania, 1976	151
5-10	Top Coal Producers in West Virginia, 1976	153
5-11	Top Coal Producers in Alabama, Fiscal Year 1975-76	156

Number		Page
5-12	Top Coal Producers in Virginia, 1976	157
6-1	Estimated Coal Reserves Ownership, U.S., 1978	165
6-2	Twenty Top Coal Land Owners in Illinois	167
6-3	Top 25 Owners of Coal Acreage in Kentucky	170
6-4	Top Land/Mineral Owners in 14 West Virginia Counties, 1968	173
6-5	Top Land/Mineral Owners in 51 West Virginia Counties, 1974	175
6-6	Proportionate Corporate Ownership of Coal Lands and Minerals in West Virginia, by County	177
6-7	Top 25 Land and Mineral Owners of 5 East Tennessee Counties	180
6-8	15 Top Land and Mineral Owners of 6 Southwestern Virginia Counties	182
6-9	Public and Private "Interlocks" in West Virginia	186
7-1	Producing Members of the National Coal Association, 1978	196
7-2	Companies Represented on the Board of Directors, American Mining Congress, 1977	198
7-3	Members of the Bituminous Coal Operators Association, 1978	199
7-4	The Sixty Largest Coal Producers in 1976 and Their Coal Association Memberships at the National Level	203
8-1	United Mine Workers of America: National and District Offices and Officials, January, 1979 . . .	235
8-2	UMWA Membership, By District, 1976	239
9-1	Projected Coal Production by State in 1985	251
9-2	Projected New and Expanded Production by 1985 in the ORBES States	252
9-3	Illinois Projected New and Expanded Production by 1985	253
9-4	Indiana Projected New and Expanded Production by 1985	254

Number | Page

9-5 Eastern Kentucky Projected New and Expanded Production by 1985 255

9-6 Western Kentucky Projected New and Expanded Production by 1985 256

9-7 Ohio Projected New and Expanded Production by 1985 257

9-8 Pennsylvania Projected New and Expanded Production by 1985 258

9-9 West Virginia Projected New and Expanded Production by 1985 259

9-10 Projected New and Expanded Production by 1985, Non-ORBES Eastern States 260

9-11 Maryland Projected New and Expanded Production by 1985 260

9-12 Alabama Projected New and Expanded Production by 1985 261

9-13 Tennessee Projected New and Expanded Production by 1985 262

9-14 Virginia Projected New and Expanded Production by 1985 262

9-15 Projected New and Expanded Production by 1985, Western States 263

APPENDIX: COUNTY COAL PROFILES

CONTENTS

Page

Notes on Information in County Coal Profiles 273

I. ORBES States

Illinois 275

Indiana 309

Eastern Kentucky 323

Western Kentucky 361

Ohio 375

Pennsylvania 401

West Virginia 429

II. Non-ORBES States

Alabama 511

Georgia 528

Maryland 529

Tennessee 531

HIGHLIGHTS

CHAPTER 1: INTRODUCTION TO THE COAL INDUSTRY IN THE UNITED STATES

-- Coal surpassed wood as the leading source of fuel in the U.S. only in 1885. The leading coal producing region in the nineteenth century was the "central competitive field" of Pennsylvania, Ohio, Indiana, and Illinois. During the twentieth century, the relative importance of coal production from the southern Appalachian states, particularly West Virginia and Kentucky, increased as production in Pennsylvania declined. Since 1970 coal production in the West has increased rapidly.

-- Coal production declined from a post-war peak of 631 million tons in 1947 to a low of 403 million tons in 1961; production has gradually increased to a point that should pass the 700 million ton mark this year. Coal mined by surface methods has increased from 9 percent in 1940 to 57 percent in 1976.

-- Employment in bituminous coal mining peaked at over 705 thousand in 1923, declined to a low of 125 thousand in 1969, and rose to 202 thousand in 1976. Mechanization of underground and surface mining has led to an increase in productivity from 4.0 tons per person per day in 1920 to 14.5 in 1976.

-- Patterns of coal consumption have shifted dramatically over the past half-century. With dieselization, the railroad market had vanished by 1961. The retail market for home consumption has nearly disappeared. The markets for coking coal and industrial uses have remained relatively constant recently. The growth in demand for coal has come from the electric utility industry, whose consumption increased from less than 50 million tons annually in 1932 to over 463 million tons in 1976.

-- The reserve base of coal in the U.S. is approximately 434 billion tons. Recoverable reserves are estimated at 259 billion tons. There is enough coal to meet demand for the foreseeable future.

CHAPTER 2: THE ORBES STATES IN THE CONTEXT OF THE NATIONAL COAL INDUSTRY

-- Coal production in the U.S. reached a record high of 691 million tons in 1977. The six ORBES states (Illinois, Indiana, Kentucky, Ohio, Pennsylvania, West Virginia) produced 456 million tons, or 66 percent of the national total. Five non-ORBES eastern states (Alabama, Georgia, Maryland, Tennessee, Virginia) produced 72 million tons, 10 percent of the national total. Fifteen western states produced 164 million tons, 24 percent of the national total.

-- Employment in the coal industry in the ORBES region was 161 thousand in 1976, about 80 percent of the national total of 202 thousand. The non-ORBES eastern states employed 28 thousand, 14 percent of the national total. The western states employed 13 thousand, less than 7 percent of the workers in the coal industry.

-- Productivity in the ORBES states ranges from 7.5 to 14.7 tons per worker per day for underground mining and from 15.1 to 31.5 tons per worker per day for surface mining in 1976. Productivity is lower in the rougher terrain of the Appalachian basin and higher in the Illinois or Eastern Interior Basin. Productivity is much higher in the surface mines of the Northern Great Plains and Southwest Rocky Mountains states, ranging from 55 to 120 tons per worker per day.

-- The value per ton of coal is higher in the ORBES states of the Appalachian basin, because of greater amounts of premium grade metallurgical coal and other low sulfur bituminous coal, ranging from an average f.o.b. price of $30 per ton in West Virginia to $23 per ton in eastern Kentucky in 1976. The higher sulfur bituminous coal of Ohio and the Illinois basin states is valued somewhat lower, ranging from $12 per ton in Indiana to $16 per ton in Ohio. In the West, the value of coal averaged much less, ranging from less than $4 per ton for North Dakota lignite to $5 and $7 per ton respectively for Montana and Wyoming sub-bituminous coal.

-- For the coal industry nationally, productivity peaked in 1969 at 15.6 tons per worker per day for underground mining and 35.7 for surface mining. Productivity dropped 45 percent in underground mining to 8.5 tons per worker per day and 29 percent in surface mining to 25.5 tons per worker per day in 1976. Much of this decline is due to the internalization by the coal industry of the costs of mine safety and land reclamation required by the federal Coal Mine Health and Safety Act of 1969 and various state surface mining laws. Poor labor-management relations may also account for a share of the decline.

-- Only a modest amount of information is available on the race, sex, ethnic and age structure of the coal industry workforce. The number of black coal mine workers has been decreasing; in 1970 there were 3,954 blacks in the coal industry, 2.9 percent of the workforce. The ORBES states employed 2,735 blacks, 69 percent of the blacks in the coal industry. West Virginia had the largest number of blacks in the industry with 1,685, followed by Alabama with 826. Women have gained employment in the coal industry since 1973; as many as 2,000 had worked in the industry as of 1978. The expansion of coal production in the 1970s has led to the employment of a new generation of miners; the average age of coal miners dropped from 48 in 1964 to 31 in 1978.

-- The six ORBES states have 193 billion tons of coal reserves, 45 percent of the national total by tonnage and probably a majority on the basis of Btu value. They have 55 percent of U.S. reserves recoverable by underground mining, and 23 percent of the nation's reserves recoverable by surface mining. Of this reserve base in the ORBES states, 84 percent is recoverable by underground mining and 16 percent by surface mining. Illinois has the largest reserve base of any eastern state. West Virginia, eastern Kentucky, and Pennsylvania contain 81 percent of the nation's reserves of premium-grade coking coal.

CHAPTER 3: COAL PRODUCTION AND EMPLOYMENT BY COUNTY IN THE EASTERN STATES

-- In 1976, the six ORBES states had a total of 6,695 coal mines (2,444 underground and 4,251 surface) that produced a total of 468.7 million tons (244.4 million underground and 224.2 million surface), employing a total of 173,131 workers (120,762 underground and 52,369 surface), according to state report data.

-- In 1976 there were 200 bituminous coal producing counties in the six-state ORBES region. In addition, there were 9 bituminous coal producing counties and 9 anthracite producing counties in Pennsylvania that are not within the boundaries of the ORBES region. There were 42 additional coal producing counties in five non-ORBES eastern states, and 71 coal and lignite producing counties in 15 western states, for a total of some 289 coal producing counties in 1976 in the coterminous United States (not including Alaska). The ORBES region had 36 of the 50 counties in the U.S. that produced over 5 million tons of coal and 51 of the 77 counties that produced from one to five million tons of coal in 1976.

-- In 1976, the five non-ORBES eastern states had a total of 1,564 coal mines (675 underground and 889 surface) that produced a total of 72.9 million tons (41.1 million tons underground and 31.9 million tons surface), employing a total of 30,995 workers (19,722 underground and 11,233 surface), according to state report data. There were a total of 42 coal producing counties in 1976 in these five states. Of these counties, 11 produced over a million tons of coal and 5 of these produced over 5 million tons of coal in 1976.

Illinois

-- Illinois in 1976 and 1977 ranked fourth in terms of coal production both nationally and among the ORBES states. In 1978, Illinois will likely be dropped into fifth place by Wyoming. In terms of employment in 1976, Illinois ranked fifth nationally and among the ORBES states.

-- In 1976, Illinois had a total of 62 coal mines (23 underground and 39 surface) that produced a total of 58.1 million tons (30.9 million underground and 27.2 million surface) and employed a total of 14,788 workers (10,396 underground and 4,392 surface). In 1977, Illinois had a total of 70 coal mines (25 underground and 45 surface) that produced a total of 53.9 million tons (29.6 million underground and 24.3 million surface) and employed a total of 16,114 workers (11,375 underground and 4,739 surface).

-- Illinois had 19 coal producing counties in 1976 and 21 in 1977. In 1976, 15 counties produced over one million tons, three of which produced over 5 million tons, and one of these, Perry, produced over 10 million tons. In 1977, 16 counties produced over a million tons, two of which produced over 5 million. Over a thousand miners were employed in each of 5 counties in 1976, in each of 6 counties in 1977.

-- The major problems facing the coal industry in Illinois is the high sulfur content of its coal. According to the Illinois Geological Survey, over 95 percent of the state's coal reserves contain between 3 and 5 percent sulfur; less than 3 percent of the reserves contain 1.5 percent sulfur or less. In recent years, Illinois coal shipped to electric utilities has averaged around 4 percent sulfur. Air pollution standards of the Environmental Protection Agency thus make Illinois coal vulnerable to competition from lower sulfur coal from western fields. Some 30 percent of the coal purchased by electric utilities in Illinois in 1976 and 1977 came from Wyoming and Montana.

Indiana

-- Indiana in 1976 and 1977 ranked sixth in coal production among the ORBES states and ninth nationally, behind Wyoming, Virginia and Montana. In terms of employment in 1976, Indiana ranked sixth among the ORBES states and eighth nationally, behind Virginia and Alabama.

-- In 1976, Indiana had a total of 118 coal mines reporting to the state (2 underground and 116 surface reporting), that produced a total of 25.9 million reported tons (430 thousand underground and 25.5 million surface reporting) and employed a total of 4,950 workers (190 underground and 4,760 surface).

-- In 1976, coal was produced in 16 Indiana counties. Over a million tons were produced in each of 6 counties; 2 counties produced over 5 million tons. As is the case with Illinois, most of the coal reserves of Indiana are high in sulfur content, thus being vulnerable to competition from lower sulfur western coal under strict air pollution standards. Some 10 percent of the coal purchases by electric utilities in Indiana in 1976 and 1977 came from Wyoming and Montana.

Kentucky

-- Kentucky in 1976 and 1977 ranked first in coal production both among the ORBES states and nationally. By 1982 or 1983, if projections hold, Wyoming may take the lead from Kentucky in terms of tonnage produced. Because of the lower Btu value of Wyoming's sub-bituminous coal, Kentucky will probably continue to lead the nation in terms of energy content of coal produced for some years to come. In terms of employment, Kentucky ranked second nationally and among the ORBES states behind West Virginia in 1976 and 1977. Kentucky is unique among the states in having two distinct and widely separated coal producing regions. The eastern Kentucky coalfields are part of the Appalachian province, and the western Kentucky coalfields are part of the Eastern Interior province, or Illinois basin.

-- In 1976 eastern Kentucky had a total of 2,809 coal mines (1,303 underground and 1,506 surface) that produced 89.0 million tons (40.4 million underground and 48.6 surface) and employed 36,781 workers (19,702 underground and 17,079 surface). In 1977 eastern Kentucky had a total of 3,096 coal mines (1,503 underground and 1,593 surface) that produced 95.9 million tons (41.5 million underground and 54.5 surface) and employed 43,970 workers (22,216 underground and 21,754 surface).

-- Eastern Kentucky had 31 coal producing counties in 1976 and 1977. In 1976, 16 counties produced over a million tons each, 5 of these producing over 5 million tons each, and 2 of these produced over 10 million tons each. In 1977, 18 counties produced over a million tons each, 8 of these producing over 5 million tons each, and 2 of these, Pike and Harlan, produced over 10 million tons each. Over a thousand miners were employed in each of 12 counties in 1976 and 13 counties in 1977.

-- Mining employment in eastern Kentucky is over 20 percent of all employment in 14 counties, and over 50 percent of all employment in 3 counties. In every case, mining's proportion of county payroll is higher than its proportion of county employment, suggesting that mining wages were above county average wages in all the mining counties. In 9 counties, mining provided over half the county payroll. The average weekly mining salary was highest in Martin County, $402.21.

-- Eastern Kentucky's steam coal is relatively low in sulfur and serves a wide market area. Many small companies produce for the steam coal spot market and are subject to its fluctuations. Production of metallurgical coal is subject to fluctuations in demand from the steel industry.

-- In 1976 western Kentucky had a total of 193 coal mines (30 underground and 182 surface) that produced 54.3 million tons (23.9 million underground and 30.4 million surface) and employed 11,474 workers (6,943 underground and 4,531 surface). In 1977 western Kentucky had a total of 215 coal mines (33 underground and 182 surface) that produced 51.7 million tons (22.8 million underground and 28.9 million surface) and employed 12,722 workers (7,709 underground and 5,063 surface).

-- Western Kentucky had 13 coal producing counties in 1976 and 15 in 1977. In 1976, 6 counties produced over a million tons each, 4 of these producing over 5 million tons each, and one of these, Muhlenberg, produced over 20 million tons. In 1977. 6 counties produced over a million tons each, 4 of these producing over 5 million tons each, and 2 of these, Muhlenberg and Hopkins, produced over 10 million tons each. Over a thousand miners were employed in each of 4 counties in both 1976 and 1977.

-- In two of the leading coal producing counties of western Kentucky, Muhlenberg and Union, mining employment is over 40 percent of all employment in the counties. In every case, mining's proportion of county payroll is higher than its proportion of county employment. In three counties, mining supplied over 60 percent of the county payroll. The average weekly mining salary was highest in Muhlenberg County, $388.68.

-- As with the rest of the Eastern Interior province, or Illinois Basin, western Kentucky's coal is high in sulfur content. The district has a reliable customer committed to scrubbers in the Tennessee Valley Authority, which buys approximately half the coal production of western Kentucky. The district appears to be less vulnerable to competition for markets from low sulfur western or eastern coal than Illinois, Indiana or Ohio.

Ohio

-- Ohio in 1976 and 1977 ranked fifth in coal production both among the ORBES states and nationally. In 1978 Ohio was passed by Wyoming and dropped into sixth place nationally in terms of tonnage produced. In terms of coal employment, Ohio in 1976 ranked fourth both among the ORBES states and nationally.

-- In 1976 Ohio had a total of 385 coal mines (32 underground and 353 surface) that produced 46.8 million tons (16.7 million underground and 30.1 million surface) and employed 11,758 workers (7,681 underground and 4,077 surface). In 1977 Ohio had a total of 344 coal mines (30 underground and 314 surface) that produced 46.9 million tons (14.0 million underground and 32.9 million surface) and employed 12,167 workers (7,857 underground and 4,310 surface).

-- Ohio had 26 coal producing counties in 1976 and 25 in 1977. In 1976, 11 counties produced over a million tons each, 3 of these producing over 5 million tons each, and one of these, Belmont, produced over 10 million tons. In 1977, 13 counties produced over a million tons each, again with three producing over 5 million tons each, and Belmont among these produced over 10 million tons. Over a thousand miners were employed in each of 3 counties in 1976 and 5 counties in 1977.

-- Mining employment is over 20 percent of all employment in 3 Ohio counties. In every case, mining's proportion of county payroll is equal to or higher than its proportion of county employment. In 61 counties, mining provided over 20 percent of the county payroll, and in two counties over half. The average weekly mining salary was highest in Jackson County, $366.71.

-- Ohio coal is generally high in sulfur content, and future production will be substantially affected by air pollution regulations. Ohio is highly vulnerable to competition for markets from lower sulfur coal from neighboring Appalachian coal fields in Kentucky and West Virginia.

Pennsylvania

-- Pennsylvania in 1976 and 1977 ranked third in bituminous coal production both among the ORBES states and nationally. It will be passed by Wyoming in 1979 or 1980. In terms of bituminous coal employment, Pennsylvania in 1976 ranked third both among the ORBES states and nationally.

-- In 1976 Pennsylvania had a total of 1,721 bituminous coal mines (151 underground and 1,570 surface) that produced 85.7 million tons (44.3 million underground and 41.4 surface) and employed 33,578 workers (24,079 underground and 9,499 surface). In 1977 Pennsylvania had a total of 1,980 bituminous coal mines (157 underground and 1,823 surface) that produced 86.4 million tons (38.8 million underground and 47.7 million surface) and employed 35,197 workers (24,779 underground and 10,418 surface).

-- Pennsylvania had 27 bituminous coal producing counties in 1976 and 26 in 1977. Of these counties, 18 are within the ORBES region. In 1976 and 1977, 14 counties produced over a million tons of bituminous coal each, 8 of these produced over 5 million tons each, and two of these, Washington and Indiana, produced over 10 million tons each. Only one county producing over a million tons, Centre, is outside the ORBES region. Over a thousand miners were employed in each of 10 counties in 1976 and 1977, all of which were counties in the ORBES region. Pennsylvania also has 9 counties presently producing anthracite coal, all outside the ORBES region. Production, which has been steadily declining from a peak of 100 million tons in 1917, was about 5 million tons in 1977, when 3,603 miners were employed.

-- Mining employment is over 10 percent of all employment in 7 Pennsylvania counties, and over 45 percent in Greene County. In every case, mining's proportion of county payroll is higher than its proportion of county employment. In 5 counties, mining provided over 20 percent of the county payroll, in Greene County over 60 percent. The average weekly mining salary was highest in Clarion County, $348.54.

West Virginia

-- West Virginia in 1976 and 1977 ranked second in coal production both among the ORBES states and nationally. It will be passed by Wyoming by 1980. In terms of coal employment, West Virginia ranked first in 1976 and 1977 both among the ORBES states and nationally.

-- In 1976 West Virginia had a total of 1,407 coal mines (831 underground and 504 surface) that produced 108.8 million tons (87.8 million underground and 21.0 surface) and employed 59,802 workers (51,771 underground and 8,031 surface). In 1977 West Virginia had a total of 1,340 coal mines (831 underground and 509 surface) that produced 95.4 million tons (74.0 million underground and 21.4 million surface) and employed 61,815 workers (52,532 underground and 9,283 surface).

-- West Virginia had 35 coal producing counties in 1976 and 33 in 1977. In 1976, 20 counties produced over a million tons each, 11 of these producing over 5 million tons each, and three of these, Monongalia, Boone, and McDowell, produced over 10 million tons each. In 1977, 19 counties produced over a million tons each, 9 of these producing over 5 million tons each, with Monongalia alone producing over 10 million tons. Over a thousand miners were employed in each of 14 counties in 1976 and 1977.

-- Mining employment is over 20 percent of all employment in 12 West Virginia counties, and over 40 percent in 6 of these. Mining employment is some 70 percent of total employment in Boone, McDowell, and Wyoming Counties in the southern part of the state. Mining's proportion of county payroll is higher than its proportion of county employment for all counties with significant coal production. In 18 counties mining provided over 20 percent of the county's payroll, and over 50 percent in 9 of these counties. The average weekly mining salary was highest in Raleigh County, $337.38.

-- West Virginia's southern coalfields have lower sulfur coal than its northern coalfields. Much of the coal in its southern fields is premium grade coking coal, and the region is highly vulnerable to shifts in demand from the domestic steel industry as well as conditions in the export market for metallurgical coal for the European and Japanese steel industries.

Alabama

-- In fiscal year 1975-76, Alabama had a total of 275 coal mines (22 underground and 253 surface) that produced over 21.1 million tons (7.4 million underground and 13.7 million surface) and employed 11,526 workers (5,233 underground and 6,293 surface). In fiscal year 1976-77, Alabama had a total of 278 coal mines (23 underground and 255 surface) that produced 22.6 million tons (7.3 million underground and 15.3 million surface) and employed 10,294 workers (5,570 underground and 4,724 surface).

-- Alabama had 17 coal producing counties in these years. Three counties produced over a million tons each, with two of these, Jefferson and Walker, producing over 5 million tons each. Over a thousand miners were employed in these two counties in 1975-76, and in 1976-77 over a thousand miners were also employed in Tuscaloosa County.

Georgia

-- Georgia has only one major mining company, the Lookout Mountain Coal Company, which operates 3 surface mines in Chattooga County, producing approximately 186,000 tons of coal in 1976 and 1977 and employing some 100 workers.

Maryland

-- Coal production in Maryland takes place in Allegany and Garrett Counties at the end of the state's western panhandle. In 1976 Maryland had a total of 114 coal mines (2 underground and 112 surface) that produced 2.7 million tons (175,000 underground and 2.5 million surface) and employed 704 workers (53 underground and 651 surface). In 1977 Maryland had a total of 143 coal mines (3 underground and 140 surface) that produced 3.0 million tons (261,000 underground and 3.0 million surface) and employed 891 workers (65 underground and 826 surface).

Tennessee

-- In fiscal year 1975-76, Tennessee had a total of 187 coal mines (160 underground and 27 surface) that produced 9.0 million tons (7.4 million underground and 1.6 surface) and employed 3,501 workers (3,124 underground and 377 surface). In fiscal year 1976-77, total coal production in Tennessee rose to 9.6 million tons, with 3,719 employees. Production continued to climb in fiscal year 1977-78 to 9.9 million tons with 4,576 employees.

-- Tennessee had four counties producing over a million tons of coal in fiscal year 1975-76: Anderson, Campbell, Claiborne, and Scott. Each of these had approximately 500 or more employees in the industry. In fiscal year 1977-78, Anderson and Campbell Counties each produced over 2 million tons, with employment of 821 and 1,052 workers respectively. Sequatchie County produced over a million tons in fiscal year 1976-77, but then dropped back below in 1977-78.

Virginia

-- In 1976 Virginia produced a total of 40.0 million tons of coal (26.1 million underground and 13.9 million surface) and employed 15,124 workers (11,312 underground and 3,812 surface). In 1977 Virginia produced a total of 37.5 million tons of coal (23.9 million underground and 13.6 surface) and employed 15,742 workers (11,556 underground and 4,186 surface).

-- Virginia had 7 coal producing counties in 1976 and 6 in 1977. Buchanan has been the largest producer, with 12.7 million tons in 1977, followed by Wise, Dickenson, Tazwell, and Russell Counties. Buchanan has over 7,000 employees in the industry, Wise has around 4,000, and Dickenson nearly 2,000.

CHAPTER 4: COAL CONSUMPTION AND DISTRIBUTION

-- The leading consumer of coal in the United States is the electric utility industry. The amount of coal used by electric utilities is rising steadily, from 392 million tons in 1974 to 406 million tons in

1975, 448 million in 1976, and 577 million in 1977. Electric utilities accounted for some 79 percent of national coal consumption in the first half of 1978, and will probably account for over 80 percent in 1979.

-- The six ORBES states are the six leading consumers of coal by electric utilities in the U.S. Ohio led the nation in electric utility consumption of coal in 1976 (with some 50 million tons used), followed by Pennsylvania (37 million tons), Illinois (35 million tons), Indiana (29 million tons), West Virginia (28 million tons), and Kentucky (nearly 25 million tons). The three leading consumers of coking coal in 1976 were also ORBES states: Pennsylvania (23 million tons), Ohio (12.5 million tons), and Indiana (12.45 million tons). Ohio was also the largest consumer of coal for other industrial users and for retail dealers in 1976.

-- Each ORBES state produces within its borders at least 55 percent of the coal consumed by its electric utilities. Each ORBES state receives at least 80 percent of the coal consumed by its electric utilities from no more than three states, itself included. Coal from the western states of Montana, Wyoming, Colorado and Utah has begun to move into the ORBES region, and provided 32 percent of the coal consumed by electric utilities in 1976 in Illinois, 11 percent in Indiana, and 6 percent in Ohio. In 1977, this figure rose to 35 percent in Illinois, 13 percent in Indiana, and 8 percent in Ohio.

-- In 1975 the ORBES states were the six leading states in terms of tonnage of coal sold to electric utilities. In 1976, Wyoming and Montana displaced Indiana to move into the sixth and seventh places. In 1977 Wyoming moved ahead of Ohio, and the standings in terms of millions of tons delivered to electric utilities were: Kentucky (109.7), Illinois (45.6), Pennsylvania (45.5), West Virginia (44.2), Wyoming (42.2), Ohio (41.7), Montana (30.0), and Indiana (24.3). Wyoming will probably be found to have moved into second place in 1978. By 1982, Wyoming will have moved into first place and Montana into third, behind Kentucky.

-- In terms of coal produced for coke, the ORBES states include four of the top six producers. The rankings for 1976 with millions of tons delivered to coke plants were: West Virginia (26.9), Pennsylvania (25.5), Kentucky (12.2), Alabama (5.9), Virginia (4.5), and Illinois (3.6). Indiana and Ohio sold no coal for coking purposes.

-- Since 1970 the coal producing states west of the Mississippi River have become increasingly important suppliers of coal to the electric utility industry. The contribution of the western states to the total domestic coal consumed by electric utilities has risen from 16 percent in 1973 to nearly 29 percent in 1977. Wyoming and Montana have become leading suppliers of electric utilities through a rapidly expanding surface-mined production of sub-bituminous coal. Texas and North Dakota have expanded their production of lignite. In 1976, 87 percent of coal produced in the western states was sold to electric utilities.

-- Although only four percent of the western coal produced in 1976 was used for coke, certain states are important suppliers of metallurgical coal to the steel industry in the western states. Colorado with 2.6 million tons, Utah with 1.6 million tons, and New Mexico with .8 million tons were the leading western suppliers of coking coal in 1976. Oklahoma with 441 thousand tons and Arkansas with 189 thousand tons in 1976 also figure in coking coal production.

-- It is only coal from Wyoming, Montana, Colorado and Utah that has any significant potential for entering the midwestern and eastern utility markets traditionally served by the eastern coal producing states. Montana supplies more steam coal to Minnesota and Illinois than it consumes within its own borders, and is also a significant supplier to Wisconsin, Michigan and Indiana. Wyoming is its own leading consumer, and also supplies a number of midwestern and plains states, including Illinois, Ohio and Indiana in significant quantities. Utah coal has been supplied to Ohio and Indiana in modest amounts. Colorado coal has been supplied to Illinois in significant amounts and to Ohio and Indiana in lesser amounts.

-- Illinois will remain on the border of the market area for Northern Great Plains sub-bituminous coal. Two factors make further expansion of western coal sales in the ORBES states (other than Illinois) unlikely: the Environmental Protection Agency's "new source performance standards" issued under the Clean Air Act Amendments of 1977, and the rapidly increasing transportation costs for moving western coal to eastern markets. Coal from the Northern Great Plains and the Southwestern Rocky Mountains states will likely remain competitive in midwest states west of the Mississippi River and in the Gulf states. This would have the effect of restricting the growth of markets for eastern coal in these areas, although eastern coal would preserve most of its traditional market area east of the Mississippi. This assumption projects a relative stability for eastern coal production rather than any rapid expansion or decline.

CHAPTER 5: THE OWNERSHIP STRUCTURE OF THE COAL INDUSTRY

-- The coal industry can be described as segmented into oligopoly and competitive sectors, usually distinguished as national and independent companies. Most coal companies in the oligopoly sector are large in size, bureaucratic in management, often owned by a larger oil, gas, mineral, steel or electric utility company that deals in multi-state, national or even international markets, and that operates under a contract with a labor union (most often the United Mine Workers of America). Companies in the competitive sector tend to be closely held, identified with one or a few families, entrepreneurial in management style, locally oriented, and non-union.

-- Prior to the 1950s, coal companies in the oligopoly sector did not account for a substantial proportion of coal production. Since 1960, the oligopoly sector has become the dominant component of the industry. In 1976, the 60 or so coal companies in the oligopoly sector accounted for over 65 percent of national coal production. The competitive sector, composed of some 3,400 companies producing over 30 percent of national coal production, continues to be an important part of the industry, particularly in the Appalachian states.

-- The segmentation of the coal industry into oligopoly and competitive sectors is analytically distinct from the question of competition and concentration in the industry. In a purely competitive market, prices are set by supply and demand conditions. Higher degrees of concentration increase the possibility of successful collusion among sellers to set prices, resulting in higher long-run rates of profit than would result in a competitive market. Assessing the market structure of the coal industry (and thus predicting the conduct and performance of coal companies) requires a definition of coal market areas and significant concentration ratios.

-- The growing ownership of coal producing companies and coal reserves by the petroleum industry has prompted several studies of concentration in the coal industry in recent years. Most are in general agreement with a 1978 Department of Justice study which identified four coal market regions: the Appalachian, the Midwest, the Northern Plains, and the Southwest. The study finds the Appalachian market to be highly competitive, the Midwest market reasonably competitive, the Northern Plains market increasingly competitive, and only the Southwest market to be seriously concentrated.

-- Leading coal producers in the ORBES region include the following company groups (with ORBES coal production in millions of tons in 1977): Peabody (45.4), Consolidation (42.5), Amax (14.4), Island Creek (13.8), U.S. Steel (11.4), Bethlehem (10.6), Old Ben (9.6), and American Electric Power (9.3).

-- Oligopoly sector or national companies produced over 311 million tons of coal in the ORBES states, some 67 percent of the region's production. Nearly 200 million tons of underground production in the ORBES states were accounted for by the national companies, 81 percent of the underground production in the region. A small majority of the surface-mined coal, 51 percent, was produced by the national companies in the region. In each of the six ORBES states a majority of the total production is mined by the national or oligopoly sector companies, and they are almost completely dominant in Illinois and Indiana. When Kentucky is separated into eastern and western districts, local companies are seen to mine a majority of total production in the eastern district. Although the national companies mine a majority of the underground production in all states (and both Kentucky districts), local companies mine a majority of the surface production in eastern Kentucky (and thus Kentucky statewide), Pennsylvania, and West Virginia, and mine half the surface production in Ohio.

-- In three of the non-ORBES coal producing eastern states (Georgia, Maryland, and Tennessee), the oligopoly sector or national companies play a minimal role and production is almost exclusively in the hands of competitive sector or independent companies. Oligopoly sector production in Alabama and Virginia, on the other hand, is extensive. The oligopoly sector is also dominant in most of the western coal producing states.

-- Although there is little evidence that the level of concentration in the coal industry is or is likely to become high enough to have undesirable effects on market conduct or performance, there are other potential impacts of increasing concentration which have not yet been studied adequately. Consolidation of ownership by the oligopoly sector may lead to increasing political influence on federal and state coal regulatory policy by companies in the coal industry. Large companies have greater financial resources, technical expertise, and access to government officials than do smaller companies. On the other hand, ownership by absentee firms may reduce local-level political corruption and increase the willingness of county government to tax the coal companies, thus providing more funds to the public sector in coal counties. By virtue of their access to capital, oligopoly sector companies can increase the scale of their operations, with increased productivity and improved health and safety in the long run. Unionization is more likely among oligopoly sector companies. Although large scale operations will increase the potential for environmental damage, the increased resources and public visibility of the national corporations also make it more likely that reclamation will be achieved.

CHAPTER 6: COAL LAND AND MINERAL OWNERSHIP

-- The ownership of coal land and mineral rights can have an important influence on the development of coal reserves. Indirect impacts on local government, tax policy, public and private services, and the quality of life may also be evident. Nevertheless, information on coal land ownership is difficult to obtain, and no comprehensive studies have been made.

-- The federal government owns or controls lands, mostly in the West, that contain half the nation's 260 billion tons of recoverable coal reserves. An estimated 109 billion tons of coal reserves (not all recoverable) are owned by 32 private corporations that each control a billion tons or more. The five private companies holding the largest blocks of coal reserves are Continental Oil, Burlington Northern, Union Pacific, Peabody, and Exxon.

-- Within the ORBES states, initial studies of ownership of coal land and mineral rights have been made for Illinois, Kentucky, and West Virginia. In the coal counties of Illinois, companies generally own the land, not just the mineral rights. Coal companies own less of the total acreage of the counties, in comparison to the Appalachian states, but the ownership of coal lands is more highly concentrated. Twenty corporations own over 99 percent of the coal lands in Illinois.

-- In Kentucky, ownership of coal reserves is considerable less concentrated than in Illinois, and somewhat less concentrated than West Virginia. The 25 leading owners of coal lands and mineral rights control about a third of the total coal acreage.

-- In West Virginia, one study found that in the 14 leading coal producing counties, the top 25 property owners controlled some 44 percent of the land in the counties. Another study found that in 27 of West Virginia's 55 counties, out-of-state companies controlled over 50 percent of the land.

-- While coal lands in counties with a diversified economic base, as in Illinois, are assessed and taxed with a relative equity, in counties in the Appalachian states where coal production is the overwhelmingly dominant industry, coal lands have carried substantially less than their share of the local tax burden. A severance tax on the production of coal can be an alternative to property taxation of coal lands if an adequate proportion of the revenue is actually returned to the counties impacted by coal mining.

CHAPTER 7: COAL OPERATOR ASSOCIATIONS

-- Operator associations can be categorized into two major varieties: trade associations and labor relations associations. Trade associations deal with a variety of matters of interest to the industry, including legislative, regulative, and public relations concerns. Labor relations associations bargain collectively with a union and handle arbitration of disputes arising under a contract.

-- The organization of coal operators and companies on the national, state, and district levels tends to parallel the structural division of the industry into oligopoly and competitive sectors. On the national level, the oligopoly sector companies tend to be members of the two major trade associations: the National Coal Association and the American Mining Congress. The Bituminous Coal Operators' Association is the labor relations association that represents the oligopoly sector and allied companies in contracting with the United Mine Workers of America.

-- Competitive sector or "independent" coal companies tend to be organized into two distinct types of trade associations according to whether they are involved in underground or surface mining. Deep mining companies in the competitive sector tend to be members of the National Independent Coal Operators' Association and its state or district affiliates. Independent surface mining companies form the base for the new Mining and Reclamation Council of America and the various state surface mining and reclamation associations.

-- On the state and sub-state level, we have identified some 25 coal operator trade and labor relations associations in the ORBES region. Another 7 associations are identified in the non-ORBES eastern states. There are 9 additional associations of coal operators in states west of the Mississippi River.

CHAPTER 8: UNIONS IN THE COAL INDUSTRY

-- The United Mine Workers of America (UMWA) has been the leading union of coal miners in the United States and Canada since its founding in 1890. The UMWA grew during the first two decades of this century to a peak of 485,000 members in 1922, and then declined with the troubles of the industry to a membership of less than 100,000 by 1929. With the passage of the National Industrial Recovery Act in 1933, the legal basis for union organizing was strengthened, and with the leadership of John L. Lewis, the UMWA quickly grew to over 400,000 members by the mid-1930s.

-- Lewis had long held the goal of stabilizing the coal industry by restricting competition and consolidating production into more efficient units. This could only be accomplished by mechanization and elimination of marginal companies. A step in this direction was achieved by the UMWA with the negotiation of the Bituminous Coal Wage Agreement of 1950 and the formation of the Bituminous Coal Operators Association. Lewis did not foresee that mechanization would reduce the miners employed in the industry from 416,000 in 1950 to 134,000 in 1965.

-- Many smaller operators in the Appalachian coalfields dropped their contracts with the UMWA during the late 1950s and 1960s. The UMWA represents some 175,000 working members at present; but it has no more than 8,000 in states west of the Mississippi. Although the UMWA represents a substantial majority of the working miners in the country, it is more heavily represented in underground than surface mining. The UMWA thus represents a smaller proportion of the total tonnage production (now estimated to be only 50 percent) than of the total number of miners.

-- The UMWA is organized into 19 districts in the United States and 2 in Canada. Of these districts, 12 are included in the ORBES region. Covering the ORBES region are districts 2 and 5 in Pennsylvania; district 4 in western Maryland and southwestern Pennsylvania; district 6 in Ohio and the northern West Virginia panhandle; district 11 in Indiana; district 12 in Illinois; districts 17, 29, and 31 in West Virginia; district 19 in southeastern Kentucky and Tennessee; district 23 in western Kentucky, and district 30 in eastern Kentucky.

-- The Progressive Mine Workers of America has its roots in an organization formed in 1932 by a group of miners who broke away from the UMWA's district 12 in Illinois. The Progressives had a peak membership of around 34,000 in 1934, which declined to 16,000 by 1942 and 8,000 in 1949. The PMWA was unable to expand its limited base in Illinois and its toehold in eastern Kentucky until the late 1960s when it obtained contracts with companies mining in the Northern Great Plains states. Presently, the PMWA has approximately 2,800 working miners: 700 in Illinois, 125 in Indiana, 500 in eastern Kentucky, 1,250 in Wyoming and Montana, and 200 in North Dakota.

-- The Southern Labor Union has its origins in a local union formed in Tennessee in 1957 at a mine that had closed rather than operate under a UMWA contract. The SLU appears to be viewed by operators of some small and medium-sized mines as a means of preventing organizing efforts by the UMWA. Presently, the SLU has approximately 3,500 working miners: 1,800 in Kentucky, 1,000 in Tennessee, 500 in Pennsylvania, and some 200 in Alabama, Virginia, and West Virginia.

-- Two other national unions play a role in representing miners, primarily in the western states. The International Union of Operating Engineers represents one surface mine in Indiana, but has its major strength among coal miners in surface mines in New Mexico, Montana, and Washington. The International Brotherhood of Electrical Workers represents workers at certain lignite surface mines in Texas that are adjacent to power plants. Local employee associations represent miners and coal truck drivers with a limited number of companies in the Appalachian coalfields.

CHAPTER 9: PROJECTIONS AND IMPACTS OF INCREASED COAL PRODUCTION

-- The variable forces that drive the demand for coal are many and not easily predicted: the growth rate of the economy and of electrical energy use; the growth of demand from steel and other industries; the relative costs of alternative energy sources; environmental regulations; exports and imports of coal; and coal industry labor relations and productivity.

-- The National Energy Plan announced in 1977 calls for a doubling of coal production by 1985 to 1.2 billion tons. Whether this goal can be met has been questioned by several recent studies that suggest production of a billion tons of coal by 1985 will be difficult to achieve. Using recently updated projections of new and expanded coal production, and allowing for depletion of mines in the eastern states, we have concluded that the 1.2 billion ton goal could be met in 1985 under favorable demand circumstances.

-- Whether the 1.2 billion ton output is reached in 1985 or later, it is clear that the major expansion of coal production will take place in the western states, where production will rise from 166 million tons in 1977 to 665 million tons. Production in the ORBES states is projected to rise only from 450 million tons in 1977 to 501 in 1985 or thereabouts. Eastern states production as a whole would rise only from 523 million tons in 1977 to 580 million tons.

-- The largest expansion by 1985 among the ORBES states is projected for Illinois (a net of 31 million tons, allowing for depletion); apparently utilities expect to continue to use Illinois coal despite its high sulfur content. Coal production will begin in Clinton, Hamilton, and

Logan Counties. Indiana is projected for a net gain of nearly 4 million tons. Both the eastern and western coalfields in Kentucky may only show enough new production to offset depletion; there is no net gain projected for Kentucky overall. Pike County in eastern Kentucky will experience the largest net increase. Ohio is projected for a net gain of 5 million tons, despite its problem with high sulfur coal; Monroe County alone will have a net increase of over 9 million tons. Pennsylvania is projected for a net loss of around 3.4 million tons, although Greene County should experience a substantial net increase. West Virginia is projected for a net gain of 15 million tons; most of this increase is projected from the coalfields in the southern half of the state, and thus will depend on the state of the domestic and international metallurgical coal markets.

-- Among the non-ORBES eastern states, only Alabama is projected for a net gain (over 10 million tons) by 1985; Jefferson and Tuscaloosa Counties will gain most. Virginia's new and expanded production may fall short of covering depletion by some 3 million tons. Among the western states, the largest expansions will take place in the sub-bituminous fields of Wyoming and Montana and the lignite fields of Texas and North Dakota. New Mexico, Colorado and Utah will also register large gains.

-- Coal mining and coal burning will continue to have important social, economic, and environmental effects. These include atmospheric pollution, acid drainage, land subsidence, flooding, waste disposal, and removal of land from other uses. The impacts of coal mining are likely to be greatest in the Appalachian portion of the ORBES region because of the extent of production, the topography of the land, and the historical tradition of cost externalization, neglect, and inadequate taxation and regulation.

-- Coal mining is likely to remain a dangerous occupation with serious health impacts to the labor force. Coal miners' death rates for respiratory diseases, stomach cancer, lung cancer, and hypertension is greater than those of the general population. Roughly 4,000 deaths per year are attributed to coal workers' pneumoconiosis. Even conservative growth scenarios estimate that between 3,000 and 5,000 coal miners are likely to be killed at work between now and the year 2000, and that 350,000 to 700,000 disabling injuries averaging four to five months each will also occur.

-- Studies of the ability of local governments to respond to the social costs of increased coal production suggest that older, single-industry mining communities as well as some new mining communities in rural areas (as in eastern Kentucky and southern West Virginia) may not be able to absorb the impacts of new or expanded coal production. On the other hand, economically diversified communities in the eastern states (such as Tuscaloosa County, Alabama; Perry County, Illinois; and certain counties in southeastern Ohio) should be able to absorb increased coal production and employment without severe strain.

CHAPTER I

INTRODUCTION TO THE COAL INDUSTRY IN THE UNITED STATES

The use of coal as a fuel is essentially a practice of the modern world. Although coal was burned on a small scale in ancient China and other scattered cultures, the economically significant use of coal did not begin until the thirteenth century in England and western Europe. J.U. Nef, the noted historian of the British coal industry, writes, "There is, perhaps, no other natural product which is so essential a part of our life, and which yet has been of so little importance in the lives of ancient peoples."[1] References to "coal" in ancient and medieval literature can be assumed to mean charcoal, derived from wood. Coal has a minimal place at best in the annals of ancient history, mythology, and literature.

HISTORICAL PERSPECTIVES ON COAL

The first great expansion of coal mining took place in Britain between 1550 and 1700. Coal production there soon outstripped that on the Continent in such countries as France, Germany, and Belgium. The introduction of coal was not received with acclaim. Air pollution from noxious coal smoke became a common problem in London. As early as 1307 the use of coal had been prohibited to limeburners by a proclamation, the preamble of which complained, "An intolerable smell diffuses itself throughout the neighboring places, and the air is greatly infected, to the annoyance of the magistrates, citizens and others there dwelling and to the injury of their bodily health." Nef writes, "This prejudice was deep-seated as well as of long standing. Shakespeare made Master Seacole a grubby, dirty fellow; in 1578 Queen Elizabeth is said to have stayed away from London because of the 'noysomme smells' of coal smoke."[2]

By 1700 Britain was producing nearly three million tons of coal a year, some 14 times its production of 200,000 tons in 1550. The entire production of the rest of the world in 1700 was little more than a sixth as much. During the eighteenth century production increased slowly, tripling by 1790 to a level of ten million tons.[3] A great leap in production took place in the nineteenth century, when production jumped to 230 million tons by 1903. Britain led the world in coal production until 1899, when the United States took over the lead. There can be little doubt that coal played a key role in vaulting Britain to her early supremacy in the industrial revolution. As economist W.S. Jevons wrote, coal was truly "the mainspring of modern material civilization."[4]

Hopi and Navaho tribes in Arizona mined and burned coal hundreds of years prior to the arrival of the Spaniards in the sixteenth century;

coal was thus in use in North America before it came into general use in England and Northern Europe.[5] Scattered references to the existence of coal deposits in eastern North America are found in accounts and maps of French and English explorers of the late seventeenth and eighteenth centuries. Early in the eighteenth century, cities along the Atlantic coast began to import small quantities of coal from England and Nova Scotia. Prior to the Revolutionary War the amount used annually was less than 9,000 tons.

The slow growth of coal consumption in the United States was due to the abundance of wood, which remained the primary fuel until around 1885. During most of the nineteenth century, the major sources of energy in the United States were wood, wind, and water. In addition to its use for home heating and cooking, wood was used to generate steam power for railroad locomotives and steamboats. The iron industry also used charcoal for smelting and forging. The industrial use of wood continued in the United States long after coal had been substituted for wood in Europe.[6]

The first production of coal for other than local use came from the fields near Richmond, Virginia, which had been discovered around 1700. The earliest record of shipments of coal from this field is dated 1758, when a ship took 24 tons to New York.[7] The second major region of coal to be developed was near Pittsburgh, Pennsylvania. An Englishman visiting the town in 1800 found a familiar scene: "On approaching Pittsburgh, we were struck with a peculiarity nowhere else to be observed in the States; a cloud of smoke hung over it in an exceedingly clear sky, recalling to me many choking recollections of London. Instead of wood they here use coal, mines of which are plentiful in the neighborhood."[8] The mining of eastern Pennsylvania anthracite in the vicinity of Wilkes-Barre also began about this time. Anthracite was the predominant type of coal in domestic use, particularly in the East, because of its clean-burning qualities. Pennsylvania was the only significant producer of anthracite coal, and until around 1850 also produced over half the country's bituminous coal, with half this production from the Pittsburgh seam alone.[9]

Canals provided the major means of transporting coal from the Pennsylvania and Ohio coalfields between the 1820s and the Civil War. After the Civil War, railroads displaced canals as the principal method of transport, and also became a major source of demand for coal. Pig iron and steel production expanded rapidly after 1870, and the United States surpassed Britain in both categories by 1890. Electrical power generation began around 1880 and expanded rapidly after 1900. The rapid growth of the economy during the last quarter of the nineteenth century promoted the expansion of the coal industry.[10] Coal production rose from little over 100,000 tons in 1800 to one million tons in 1832, ten million tons in 1851, twenty million tons in 1860, and jumped to 110 million tons in 1885, the year that coal passed wood as the leading source of energy in the United States.[11]

COAL DEPOSITS AND REGIONAL PRODUCTION

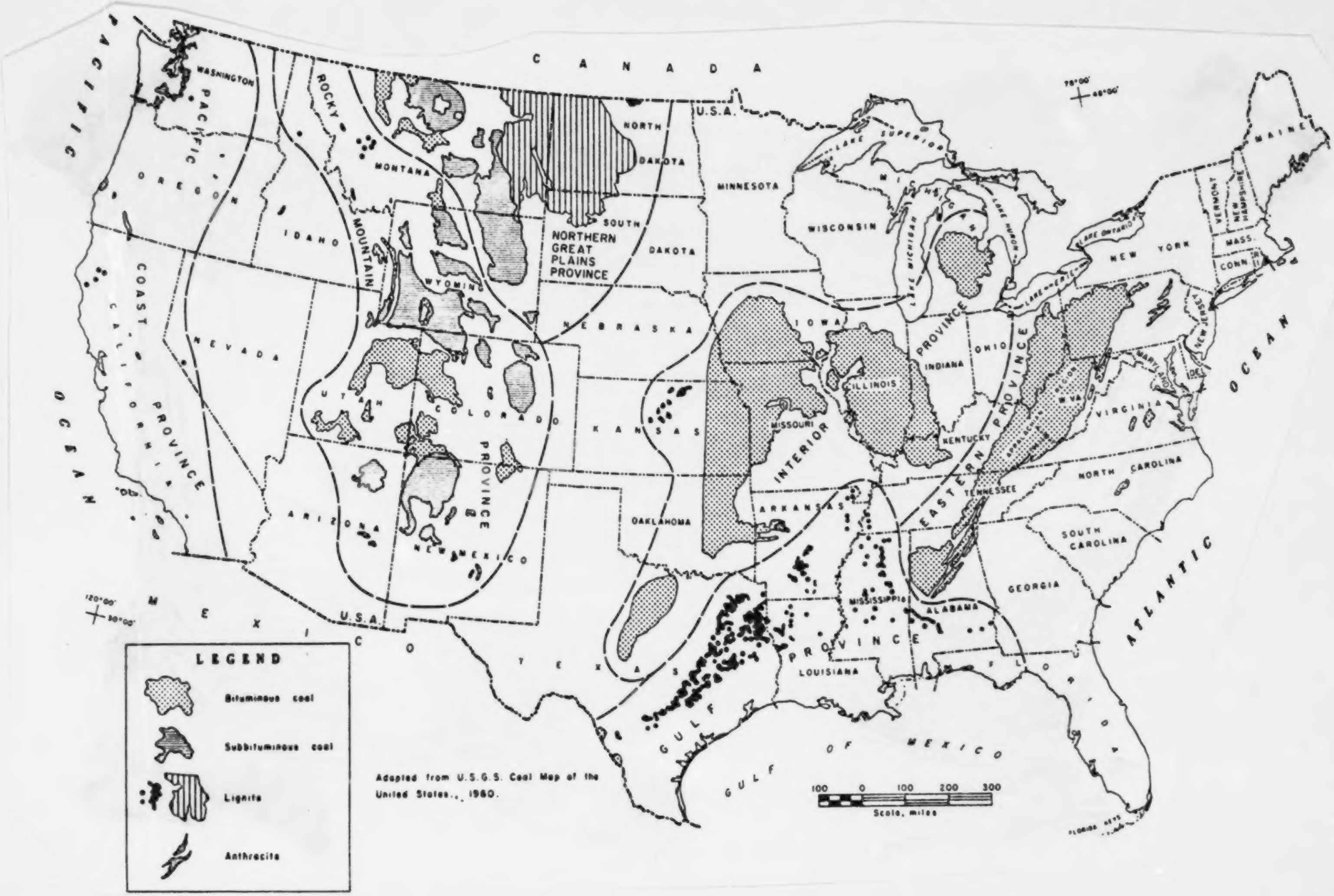
The coal deposits of the United States are grouped in six major areas called provinces: Eastern, Interior, Gulf, Northern Great Plains, Rocky Mountain, and Pacific Coast. Figure 1-1 outlines these provinces. The provinces are subdivided into regions, basins, fields, and districts.[12] The Appalachian region produces most of the coal in the Eastern province, accounting for 60 percent of the total production and 80 percent of the total employment nationally for the bituminous coal industry in 1976. The eastern region of Illinois, Indiana, and western Kentucky is the most important coal producer of the Interior province, accounting for 20 percent of production and 14 percent of employment nationally in 1976. The Northern Great Plains and Rocky Mountain provinces are growing in importance as surface mining expands in the West. The Gulf province is experiencing a rapid growth of lignite production in Texas. The Pacific Coast province and Alaska remain relatively unimportant in terms of national coal production.

During the first three decades of this century, the most notable shift in the location of coal production was the decline in the relative importance of the "central competitive field" of Pennsylvania, Ohio, Indiana, and Illinois, and the increasing production from the southern Appalachian fields. The greatest increase in production came from West Virginia and Kentucky, as output from Pennsylvania declined. Since 1970 production in the western states has increased rapidly, and Wyoming may become the leading coal producer by tonnage in 1981 or 1982.

EMPLOYMENT AND TECHNOLOGICAL CHANGE

During this century, employment in the bituminous coal mines gradually increased to a peak of over 705 thousand in 1923, fell to a low of 406 thousand in 1932, recovered somewhat to 492 thousand in 1937, and subsequently declined to a low of 125 thousand in 1969. During the 1970s employment has increased to a high of 208 thousand in 1976. In this period, production fell from 569 million tons in 1920 to a Depression low of 309 million tons in 1932, recovered during World War II to a maximum of 631 million tons in 1947, declined throughout the 1950s to a low of 391 million tons in 1954, and began a recovery in the mid-1960s that has built to a 688 million tons production level in 1977. Table 1-1 shows production, employment, and productivity figures at five year intervals from 1920 to 1975.

Much of the reduction in employment in the coal industry is related to technological advances. The undercutting machine had replaced the miner's pick in many mines before World War I. By 1924 only 20 percent of the nation's coal was undercut by hand; in 1940 the figure was less than 10 percent, and by 1974 less than one percent. Mechanical loaders had begun to replace the backbreaking work of shoveling in the 1920s,


CANADA
U.S.A.
MEXICO
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
PACIFIC COAST PROVINCE
ROCKY MOUNTAIN PROVINCE
NORTHERN GREAT PLAINS PROVINCE
INTERIOR PROVINCE
EASTERN PROVINCE
GULF PROVINCE
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
W.VA.
MARYLAND
DEL.
NEW JERSEY
NEW YORK
VERMONT
NEW HAMPSHIRE
MAINE
MASS.
CONN.
R.I.
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MICHIGAN
FLORIDA KEYS
120°00' 30°00'
75°00' 45°00'
100 0 100 200 300
Scale, miles
LEGEND
Bituminous coal
Subbituminous coal
Lignite
Anthracite

Adapted from U.S.G.S. Coal Map of the United States., 1960.

Figure 1-1.--Bituminous and subbituminous coal and lignite fields of the conterminous United States.

TABLE 1-1

PRODUCTION, EMPLOYMENT AND PRODUCTIVITY IN THE U.S. BITUMINOUS COAL INDUSTRY, 1920-1976

Year	Production (Net Tons)	Average Value Per Ton	Workers Employed	Net Tons Per Man/Day	% of Total Production Mined by	
					Surface	Underground
1920	568,666,683	$3.75	639,547	4.00	1.5	98.5
1925	520,052,741	2.04	588,493	4.52	3.2	96.8
1930	467,526,299	1.70	493,202	5.06	4.3	95.7
1935	372,373,122	1.77	462,403	4.50	6.4	93.6
1940	460,771,500	1.91	439,075	5.19	9.4	90.6
1945	577,617,327	3.06	383,100	5.78	19.0	81.0
1950	516,311,053	4.84	415,582	6.77	23.9	76.1
1955	464,633,408	4.50	225,093	9.84	26.1	73.9
1960	415,512,347	4.69	169,400	12.83	31.4	68.6
1965	512,088,263	4.44	133,732	17.52	35.1	64.9
1970	602,932,000	6.26	140,140	18.84	43.8	56.2
1975	648,800,000	19.23	190,000	14.74	54.8	45.2
1976	678,685,000	19.43	202,280	14.46	56.6	43.4

Source: Bituminous Coal Facts, 1972; Bureau of Mines, Mineral Industry Surveys, Coal--Bituminous and Lignite in 1975; Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 10, Dec. 9, 1977, Table 3; No. 18, Feb. 3, 1978, Table 4.

and mobile loaders were standard equipment by the 1950s. More elaborate machinery such as the continuous miner was introduced in the late 1940s and 1950s and became major labor-saving devices in larger mines. Longwall mining machines, in use for some time in Europe, were introduced in the United States in the late 1960s. Advances in conveyor belt systems, hauling equipment, and roof-bolting equipment also contributed to an increase in productivity.[13]

The development of large bulldozers, electric shovels, the excavating wheel, and draglines enabled strip-mining to be conducted on an ever-increasing scale. From modest beginnings in a Kansas field in 1877, strip mining for coal expanded gradually to five percent of total domestic production in 1931, ten percent in 1941, twenty percent in 1946, and 30 percent in 1958 (strip and auger production combined). Surface production jumped from 38 percent in 1969 to 44 percent in 1970 and had reached 56 percent of national coal production by 1976. Productivity from surface mines has run from two and a half to three times that of deep mining, with surface mines averaging 26.4 tons per man per day and underground mines averaging 9.1 tons per man per day in 1976. The expansion of surface mining has led to a significant reduction in employment for a given output of coal.

THE CONSUMPTION OF COAL

Coal is classified by rank, from anthracite through bituminous to lignite, according to the percentage of fixed carbon, volatile matter, and water content. Coal is also classified by grade, according to its degree of freedom from such impurities as sulfur and ash. Coal may have a high rank (a high percentage of fixed carbon) and a low grade (high in sulfur or ash), or vice versa. For some purposes--electrical power generation, general industrial needs--coal of many ranks and grades may be used. For other purposes, such as the making of coke for steel manufacturing, specific ranks and grades of coal are necessary. A broad distinction in current use in coal marketing is between "metallurgical" coal (used in making steel) and "steam" coal (suitable for electrical power generation).

The heating value of coal is expressed in British Thermal Units, or Btu's. Anthracite contains 14,000 or more Btu's per pound. Bituminous coal contains between 11,000 and 14,000 Btu's, subbituminous coal contains between 8,300 and 11,000 Btu's, and lignite contains less than 8,300 Btu's per pound. One ton of bituminous coal has the approximate heat value of 4.17 barrels of crude oil.

Patterns of coal consumption have changed dramatically over the past 50 years. In the early 1920s, railroads used some 28 percent of the annual bituminous coal production, while public utilities used only six or seven percent. The introduction of diesel locomotives led to a drastic decline in the number of steam locomotives, and the use of coal by railroads had virtually disappeared by 1961. The use of coal for domestic and general industrial purposes also declined after World War II, and the electrical utilities' consumption of coal grew to 79 percent of the coal consumption of the United States by the first half of 1978. To the extent that electrical energy was substituted for coal, this represented for the most part a shift of the location in which coal is consumed from the home or factory to the coal-powered electrical generating plant. Figure 1-2 illustrates the changes in coal consumption patterns from 1934 to 1974. The use of coal by electric utilities varies substantially from one region of the country to another. Figure 1-3 shows coal's share of the steam electric utility fossil fuel market by region.

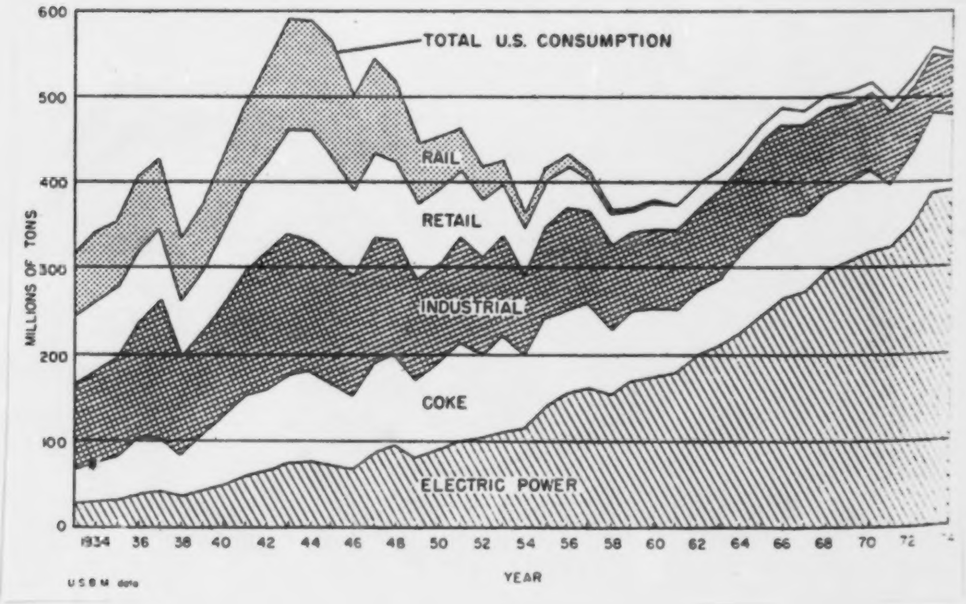
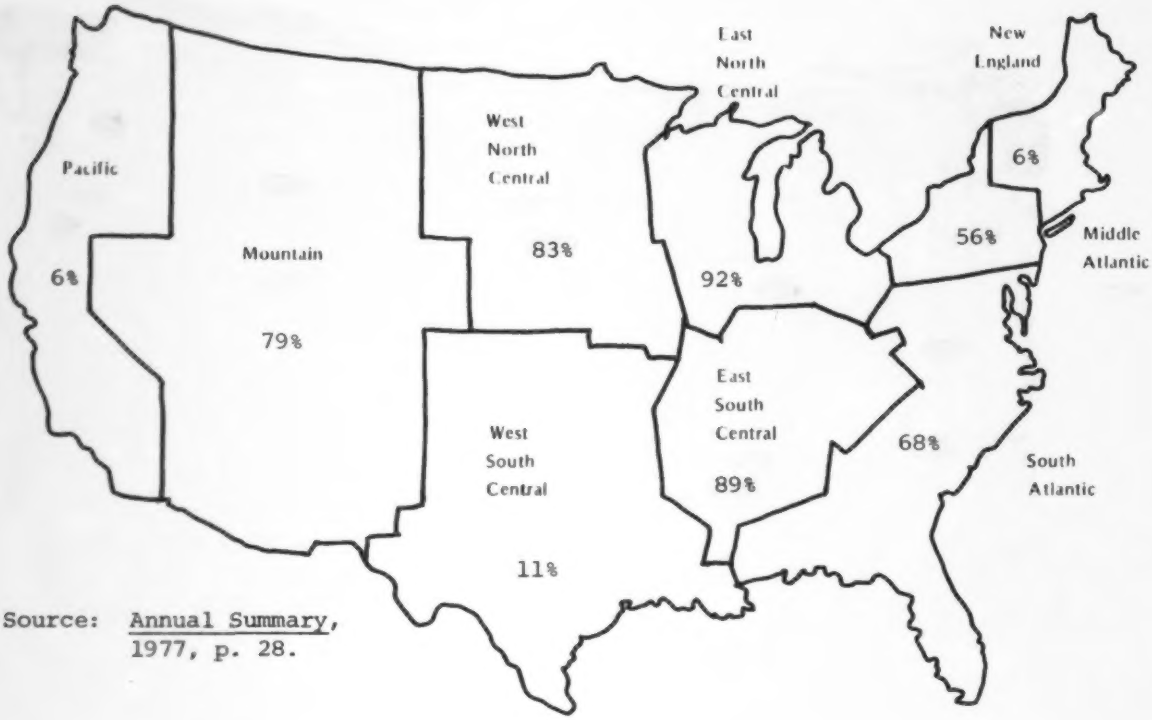


Figure 1-2.--U.S. consumption of coal, 1934-1974, by consumer group.


Pacific
6%
Mountain
79%
West
North
Central
83%
East
North
Central
92%
New
England
6%
56%
Middle
Atlantic
West
South
Central
11%
East
South
Central
89%
68%
South
Atlantic

Source: Annual Summary, 1977, p. 28.

Figure 1-3.-- Coal's share of steam electric utility fossil fuel market (on a Btu basis), 1977.

EXPORTS AND IMPORTS

The total consumption of coal is somewhat less than the total production of coal in the United States, the difference being the excess of exports over imports. Exports of coal had been around 50 million tons a year or more since 1965. Exports dropped sharply to approximately 40 million tons in 1978. Imports had been nominal, less than a million tons a year, up through 1973. The energy crisis in 1974 boosted coal imports to two million tons that year. Imports continued to rise to 3.6 million tons in 1977 and 8 million tons in 1978, of which 5 million tons were coke imported for steel making. Imports may reach 10 million tons in 1979. The leading coal export market for the United States is Canada, followed by Japan and the various countries of Europe. Most of the coal exported from the United States, an estimated 87 percent, is metallurgical grade. Canada imports both metallurgical and steam coal from the United States.[14]

COAL RESOURCES AND RESERVES

The determination of the amount of coal remaining in the ground, and that proportion of it which can be economically mined under current conditions, involves several questions of definition as well as geological and engineering research. A standardized classification system for minerals generally and coal specifically was agreed upon by the U.S. Geological Survey and the U.S. Bureau of Mines only in November 1973.[15] "Identified resources" are those bodies of coal whose "location, rank, quality and quantity are known." The "reserve base" is that proportion of the identified resource that can be "economically mined at the time of determination." The "recoverable reserve" is determined by applying a recovery factor to the reserve base. For anthracite and bituminous coal, for example, coal is counted in the resource if it is in beds of at least 14 inches thick and at a depth to 6,000 feet. The reserve base for anthracite and bituminous, however, includes only coal beds at least 28 inches thick and to a depth of 1,000 feet. Sub-bituminous coal and lignite beds must be at least 60 inches thick. Only lignite beds that can be surface mined, and generally no deeper than 120 feet, are included.

The reserve base of coal in the United States is approximately 434 billion short tons. Of this reserve base, 297 billion tons could be mined by underground methods, and 137 billion tons by surface methods. On a rough average basis, 50 percent of the coal in the ground is actually recovered by underground and auger mining, and 80 percent is recovered by strip mining.[16] Applying these recovery factors to the reserve base for underground and surface mining, we come up with approximately 149 billion tons recoverable by underground mining, and 110 billion tons recoverable by strip mining, for a total of 259 billion tons. Assuming a commonly-projected rate of consumption of 2 billion tons a year, the supply of coal would last some 130 years. With technology, costs, and demand subject to change, a life expectancy ranging from 100 years to 300 years can be forecast for the coal industry in the United States. There is enough coal to meet demand for the foreseeable future.

The United States contains approximately 30 percent of the world's recoverable coal reserves. Substantial reserves are located in the U.S.S.R., Europe, and the People's Republic of China. Currently, the U.S.S.R. is the world's leading coal producer (overtaking the United States in 1957), followed by the United States, the People's Republic of China, and Western Europe.[17]

REFERENCES

[1] J. U. Nef, *The Rise of the British Coal Industry*, Vol. I (London: Frank Cass, 1932; rpt. Hamden, Conn.: Archon Books, 1966), p. 3. Nef's two volume work is an unexcelled chronicle of British coal and an exemplar of economic history.

[2] *Ibid.*, Vol. I, pp. 133-164.

[3] *Ibid.*, Vol. I, pp. 20, 123-30; Vol. II, p. 322.

[4] W. S. Jevons, *The Coal Question*, Third Edition (1865; London: Macmillan, 1906), p. 1. Jevons' book is particularly fascinating as it is probably the first attempt to forecast the impact on industrial civilization of the depletion of coal reserves--in contemporary parlance, an "energy crisis."

[5] Howard N. Eavenson, *The First Century and a Quarter of American Coal Industry* (Pittsburgh: Privately printed, 1942), pp. 353-355. Eavenson's "first century and a quarter" refers to the period from 1758 to 1885; see p. 419.

[6] Sam H. Schurr and Bruce C. Netschert, *Energy in the American Economy, 1850-1975: An Economic Study of Its History and Prospects* (Baltimore: The Johns Hopkins Press, 1960), pp. 45-62.

[7] Eavenson, p. 32.

[8] *Ibid.*, p. 165, quoting John Bernard, *Retrospections in America, 1800-01*, p. 182.

[9] Schurr and Netschert, p. 62. See also Eavenson, pp. 138-204.

[10] Schurr and Netschert, pp. 60-71. On railroads, see Robert William Fogel, *Railroads and American Economic Growth* (Baltimore: The Johns Hopkins Press, 1964), and Albert Fishlow, *American Railroads and the Transformation of the Ante-Bellum Economy*, Vol. 126 of Harvard Economic Studies (Cambridge: Harvard Univ. Press, 1965), especially pp. 156-160 on coal.

[11] Eavenson, pp. 432-434.

[12] This classification system is defined in Marius R. Campbell, The Coal Fields of the United States, U.S. Geological Survey, Professional Paper 100-A (Washington, D.C.: U.S. Government Printing Office, 1922), pp. 10-23.

[13] C.L. Christenson, Economic Redevelopment in Bituminous Coal: The Special Case of Technological Advance in U.S. Coal Mines 1930-60 (Cambridge: Harvard Univ. Press, 1962), pp. 126-167; "A Half Century in Coal . . . And the Next Ten Years," Coal Age (October 1961), pp. 157-195.

[14] Bureau of Mines, International Coal Trade, 47 (February 1978), pp. 5-9; (June 1978), p. 5.

[15] Coal Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey, Geological Survey Bulletin 1450-B (Washington, D.C.: U.S. Government Printing Office, 1976).

[16] Paul Averitt, Coal Resources of the United States, January 1, 1974, Geological Survey Bulletin 1412 (Washington, D.C.: U.S. Government Printing Office, 1975). The history of the debate over defining coal reserves and resources is traced through 1953 in Schurr and Netschert, Energy in the American Economy, pp. 302-314, 344-346. See also Averitt, pp. 47-52.

[17] Coal Facts, 1978-1979, p. 73; Averitt, Coal Resources 1974, pp. 90-94. See also Edward D. Griffith and Alan W. Clarke, "World Coal Production," Scientific American, 240 (January 1979), pp. 38-47.

CHAPTER II

THE ORBES STATES IN THE CONTEXT OF THE NATIONAL COAL INDUSTRY

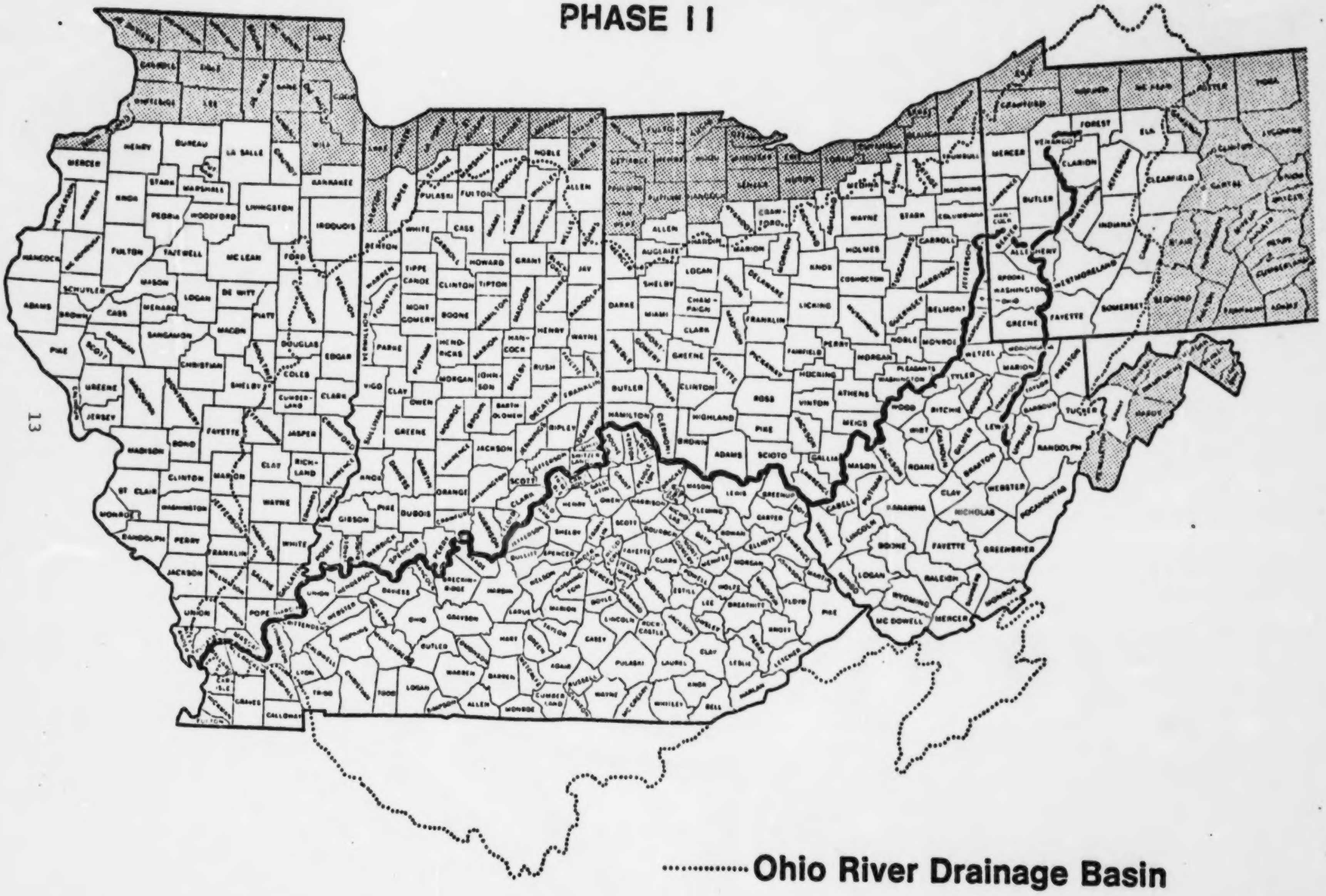
This study is concerned primarily with the coal industry in the six states of the Ohio River Basin Energy Study Region (ORBES), Phase II. The ORBES region includes all the coal producing counties of Illinois, Indiana, Ohio, Kentucky, and West Virginia, and 18 of the 27 bituminous coal producing counties of Pennsylvania. The anthracite producing counties of Pennsylvania are to the east of the ORBES region. A map of the states and counties included in the Phase II ORBES region is presented in Figure 2-1. Although the ORBES states produced over 65 percent of coal mined in the United States in 1977, neither the production or consumption of coal in the region, nor the structure of the coal industry in the region, can be fairly considered outside the context of the national coal industry. In this chapter the ORBES region will be compared with other coal producing regions in the United States. For reasons both of convenience and necessity, all bituminous coal production in Pennsylvania will be included in the ORBES figures. This will result in little distortion, as the nine non-ORBES bituminous coal producing counties in Pennsylvania are relatively minor producers.

PRODUCTION AND EMPLOYMENT

Coal production in the United States reached a record high of 691.3 million tons in 1977, up from 678.7 million tons in 1966. Estimated production for 1978 is only 654 million tons, a drop caused largely by the contract strike of the United Mine Workers of America (UMWA) begun late in 1977 and continuing into 1978, and by a Norfolk and Western Railroad strike during 1978. The National Coal Association predicts an increase to a new record of 713 million tons in 1979. Bituminous coal and lignite production by state and region for 1976 and 1977 is detailed in Table 2-1. The ORBES states accounted for 65.9 percent of national production (455.5 million tons) in 1977, down from 69 percent (468.8 million tons) in 1976. The non-ORBES eastern states maintained a production of 10.4 percent (71.9 million tons) of national production, down only slightly from 1976. The western states increased their production from 20 percent (136.1 million tons) of national production in 1976 to 23.7 percent (163.9 million tons) in 1977. Western production is estimated to have reached 28 percent (182 million tons) of national production in 1978, boosted by new electric utility markets in the West and by shipments to the East during the UMWA strike. Production in the eastern states is estimated to have dropped from 527.4 million tons in 1977 to 464 million tons in 1978.

OHIO RIVER BASIN ENERGY STUDY REGION

PHASE II



……… Ohio River Drainage Basin

Figure 2-1

TABLE 2-1

BITUMINOUS COAL AND LIGNITE PRODUCTION BY STATE 1976 AND 1977 (In thousand tons)

State	1977 Production	Percent National Production	1976 Production	Percent National Production
ORBES				
Illinois	53,493	7.74	58,239	8.58
Indiana	27,797	4.02	25,369	3.74
Kentucky	146,262	21.16	143,972	21.21
KY (E)	93,957	13.59	91,138	13.43
KY (W)	52,306	7.57	52,834	7.78
Ohio	47,918	6.93	46,582	6.86
Pennsylvania	84,639	12.24	85,777	12.64
West Virginia	95,433	13.80	108,834	16.04
Subtotal:	455,542	65.89	468,773	69.07
Non-ORBES Eastern				
Alabama	21,545	3.12	21,537	3.17
Georgia	226	0.03	186	0.03
Maryland	3,036	0.44	2,830	0.42
Tennessee	9,433	1.36	9,283	1.37
Virginia	37,624	5.44	39,996	5.89
Subtotal:	71,864	10.39	73,832	10.88
Western				
Alaska	705	0.10	706	0.10
Arizona	11,059	1.60	10,420	1.54
Arkansas	563	0.08	534	0.08
Colorado	11,989	1.73	9,437	1.39
Iowa	513	0.07	616	0.09
Kansas	897	0.13	590	0.09
Missouri	6,366	0.92	6,075	0.90
Montana	27,226	3.94	26,231	3.86
New Mexico	11,083	1.60	9,760	1.44
North Dakota	12,028	1.74	11,102	1.64
Oklahoma	5,978	0.86	3,635	0.54
Texas	15,865	2.29	14,063	2.07
Utah	8,581	1.24	7,967	1.17
Washington	5,057	0.73	4,109	0.61
Wyoming	46,028	6.66	30,836	4.45
Subtotal:	163,938	23.71	136,081	20.05
Total United States:	691,344	99.99	678,685	100.00

Sources: Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 21, Feb. 24, 1978, Table 4 (final 1976 production data); Weekly Coal Report No. 81, April 20, 1979, Table 7 (final 1977 production data).

Tables 2-2 and 2-3 detail 1976 coal production and employment by states and provinces for the eastern and western states. The ORBES states of the Eastern Interior province accounted for 20 percent of national production and 14 percent of national employment in 1976. The ORBES states in the Appalachian province accounted for 50 percent of national production and 65.7 percent of national employment. The non-ORBES Appalachian states accounted for 10.9 percent of national production and 13.9 percent of national employment in 1976. The western states, while accounting for 20 percent of national coal production in 1976, provided only 6.5 percent of national employment in the coal industry.

A glance at Tables 2-4, 2-5 and 2-6 demonstrates that the differing proportions of production and employment among states and regions is largely due to whether the coal is mined by underground or surface methods. Although Kentucky led the states in coal production in 1976 with nearly 144 million tons, it was second in employment with 37,980 miners. West Virginia, second among the states in production with 108.8 million tons, was first in employment with 56,460 miners. Some 80 percent of West Virginia's coal is mined underground, while only 45 percent of Kentucky's coal is mined underground. Within the ORBES states the proportion of surface mining varies from a low of 20 percent in West Virginia to a high of 98 percent in Indiana. In the remaining ORBES states the proportions are more even, with a majority of 53 percent underground production in Illinois, 51 percent underground in Pennsylvania, but 64 percent surface in Ohio. Of the remaining non-ORBES eastern states, only Virginia has a substantial majority of underground production (65 percent).

In the western states, virtually all the coal mined in the Western Interior, Gulf, Northern Great Plains, and Pacific Northwest provinces is surface mined. Only in the Southwest Rocky Mountain states of Utah and Colorado is there substantial underground production. In Utah, all the coal is mined underground, and the proportion of underground production in Colorado is 35 percent. Table 2-4 shows the value of the coal mined underground in Colorado and Utah, most of it for metallurgical use, to be much higher than most other western coal. The low Btu lignite of North Dakota and Texas is of low value, and the relatively low Btu sub-bituminous coal of Wyoming and Montana is priced substantially lower than the bituminous coal of the Western Interior province.

In the eastern states, Table 2-4 suggests that the higher value of underground mined coal may be due to most metallurgical grade coal being mined by underground methods. Most of the coal mined by underground methods in Illinois, western Kentucky, and Ohio is used for steam coal by the electric utilities. It is valued at little more than the surface mined coal. For the underground production of eastern Kentucky, Pennsylvania, and West Virginia--and Alabama and Virginia among the non-ORBES states--the value is up to 50 percent higher than the surface mined coal, suggesting a substantial proportion of metallurgical grade coal.

TABLE 2-2

BITUMINOUS COAL PRODUCTION AND EMPLOYMENT, EASTERN STATES, BY REGION, 1976 (In thousand tons)

State	1976 Production	Percent National Production	1976 Employment	Percent National Employment
Eastern Interior				
Illinois	58,239	8.58	13,270	6.56
Indiana	25,369	3.74	4,950	2.45
Kentucky (W)	52,834	7.78	10,010	4.95
Subtotal:	136,442	20.10	28,230	13.96
ORBES Appalachian				
Kentucky (E)	91,138	13.43	27,970	13.83
Ohio	46,582	6.86	15,010	7.42
Pennsylvania	85,777	12.64	33,390	16.51
West Virginia	108,834	16.04	56,460	27.91
Subtotal:	332,331	48.97	132,830	65.67
Total ORBES States:	468,773	69.07	161,060	79.63
Non-ORBES Appalachian				
Alabama	21,537	3.17	9,340	4.62
Georgia	186	0.03	100	0.05
Maryland	2,830	0.42	700	0.35
Tennessee	9,283	1.37	3,420	1.69
Virginia	39,996	5.89	14,430	7.13
Subtotal:	73,832	10.88	27,990	13.84
Total Eastern States:	542,605	79.95	189,050	93.47

Sources: Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 21, Feb. 24, 1978, Table 4 (final 1976 production data); Weekly Coal Report No. 18, Feb. 3, 1978, Table 4.

TABLE 2-3

BITUMINOUS COAL AND LIGNITE PRODUCTION AND EMPLOYMENT
WESTERN STATES, BY REGION, 1976 (In thousand tons)

State	1976 Production	Percent National Production	1976 Employment	Percent National Employment
Western Interior				
Arkansas	534	0.08	250	0.12
Iowa	616	0.09	140	0.07
Kansas	590	0.09	220	0.10
Missouri	6,075	0.90	760	0.37
Oklahoma	3,635	0.54	1,180	0.58
Subtotal:	11,450	1.69	2,550	1.24
Gulf				
Texas	14,063	2.07	630	0.31
Subtotal:	14,063	2.07	630	0.31
Northern Great Plains				
Montana	26,231	3.86	720	0.36
North Dakota	11,102	1.64	450	0.22
Wyoming	30,836	4.54	2,330	1.15
Subtotal:	68,169	10.04	3,500	1.73
Southwest Rocky Mtn.				
Arizona	10,420	1.54	560	0.28
Colorado	9,437	1.39	1,780	0.88
New Mexico	9,760	1.44	1,020	0.50
Utah	7,967	1.17	2,620	1.29
Subtotal:	37,584	5.54	5,980	2.95
Pacific Northwest				
Alaska	706	0.10	80	0.04
Washington	4,109	0.61	530	0.26
Subtotal:	4,815	0.71	610	0.30
Total Western States:	136,081	20.05	13,270	6.53

Sources: Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 21, Feb. 24, 1978, Table 4 (final 1976 production data); Weekly Coal Report No. 18, Feb. 3, 1978, Table 4.

TABLE 2-4

PRODUCTION AND VALUE OF BITUMINOUS COAL AND LIGNITE BY STATE, 1976

State	Production (In thousand tons)			Average Value Per Ton f.o.b. Mines		
	Underground	Surface	Total	Underground	Surface	Total
ORBES						
IL	31,008	27,231	58,239	$17.76	$13.78	$15.90
IN	437	24,931	25,369	W	12.26	12.34
KY(E)	40,551	50,587	91,138	26.37	20.36	23.03
KY(W)	23,921	28,913	52,834	15.12	13.41	14.18
OH	16,626	29,956	46,582	17.78	15.96	16.61
PA	43,759	42,018	85,777	32.73	17.63	25.33
WV	87,559	21,275	108,834	31.64	23.86	30.12
Non-ORBES Eastern						
AL	7,406	14,131	21,537	35.73	24.52	28.37
GA	--	186	186	--	33.15	33.15
MD	W	W	2,830	W	W	21.90
TN	4,428	4,855	9,283	16.00	16.58	16.31
VA	26,055	13,940	39,996	26.73	19.24	24.12
Western						
AK	--	760	760	--	W	W
AZ	--	10,420	10,420	--	W	W
AR	W	W	534	W	W	36.15
CO	3,283	6,154	9,437	27.90	8.91	15.30
IA	W	W	616	W	W	13.56
KS	--	590	590	--	19.45	19.45
MO	--	6,075	6,075	--	9.37	9.37
MT	--	26,231	26,231	--	4.90	4.90
NM	W	W	9,760	W	W	W
ND (Lig.)	--	11,102	11,102	--	3.74	3.74
OK	--	3,635	3,635	--	15.98	15.98
TX (Lig.)	--	14,063	14,063	--	W	W
UT	7,967	--	7,967	22.93	--	22.93
WA	5	4,104	4,109	28.01	W	W
WY	524	30,312	30,836	W	W	7.00

W = Withheld to avoid disclosure of individual company confidential data.

Source: Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 10, Dec. 9, 1977, Table 3.

PRODUCTIVITY

The gradual mechanization of underground mining and the growth of surface mining resulted in a rise in output from four tons per person per day in 1920, when 98.5 percent of production was mined underground, to a peak in 1969 of 15.6 tons per man-day for underground mining and 35.7 for surface mining. Since 1969, productivity has dropped 45 percent in underground mining to 8.5 tons per man-day and 29 percent in surface mining to 25.5 tons per man-day in 1976. This dramatic decline in productivity has caused considerable concern in industry and government circles. A recent study concludes that several factors have contributed to the productivity decline in the coal industry, which is untypical of other leading industries during the same period.[1]

The federal Coal Mine Health and Safety Act of 1969 requires miners to perform a number of tasks related to health and safety that do not contribute directly to the production of coal. The Act appears to be responsible for a significant drop in the number of fatalities per million tons mined and per million man-hours worked. Increased enforcement of the provisions of the Act may be contributing to the continued decline in productivity. This may be a necessary price to pay for the safety of miners. A second area of legislation that appears to be a major contributor to the decline in surface mine productivity is reclamation laws enacted by individual states and the federal Surface Mining Control and Reclamation Act of 1977, the impact of which is just beginning to be felt. This legislation generally requires that workers devote more time to the prevention of environmental damage and to reclamation.

Outside the legislative arena, substantial contributions to the decline in productivity have been held to be due to miner attitude and motivation and to the state of labor-management relations. Coal industry management tends to blame miner attitude and motivation for a portion of the decline, citing increased absenteeism and turnover. The issue of miner attitude and motivation appears to be linked to the character of labor-management relations, for which management has to shoulder a share of the burden. The increased number of wildcat strikes over the past decade is evidence of a deterioration in labor-management relations that may reflect a failure of management to adapt to the concerns of a younger and better educated workforce. Although productivity has declined substantially in the United States, the coal industry here still has much higher productivity than the coal industry in European countries. Differences in the geology of coal seams, degree of mechanization, traditions of labor relations and safety standards, and even statistical reporting make such international comparisons difficult, however.

Table 2-5 shows that productivity among the ORBES states is somewhat lower than average for surface mining in Pennsylvania and West Virginia, and substantially lower than average for underground mining in Ohio,

TABLE 2-5

PRODUCTIVITY: PERSONS WORKING DAILY, DAYS WORKED, AND OUTPUT PER PERSON PER DAY FOR THE EASTERN STATES, 1976

State	Average Number of Persons Working Daily			Average Number of Days Worked		Average Tons Per Person Per Day		
	Underground	Surface	Total	Underground	Surface	Underground	Surface	Total
ORBES								
Illinois	9,150	4,120	13,270	252	290	13.42	22.78	16.62
Indiana	130	4,820	4,950	258	195	13.36	26.50	26.06
Kentucky	24,090	13,890	37,980	217	224	12.35	25.56	17.28
KY(E)	17,820	10,150	27,970	202	216	11.27	23.06	15.73
KY(W)	6,270	3,740	10,010	259	245	14.74	31.54	20.81
Ohio	9,760	5,240	15,010*	198	251	8.59	22.76	14.33
Pennsylvania	23,250	10,140	33,390	223	225	8.44	18.40	11.49
West Virginia	50,510	5,950	56,460	230	236	7.53	15.13	8.35
Subtotal:	116,890	44,160	161,060*					
Non-ORBES Eastern								
Alabama	5,320	4,020	9,340	211	222	6.61	15.73	10.67
Georgia	--	100	100	--	249	--	7.84	7.84
Maryland	50	640	700*	216	268	14.74	15.49	15.44
Tennessee	2,130	1,290	3,420	248	247	8.38	15.25	10.96
Virginia	11,280	3,150	14,430	302	202	7.65	21.95	9.90
Subtotal:	18,780	9,200	27,990*					
Total Eastern:	135,670	53,360	189,050*					

*Data do not add to totals shown due to independent rounding.

Source: Dept. of Energy, Energy Data Reports, Weekly Coal Report, No. 18, Feb. 3, 1978, Table 4.

TABLE 2-6

PRODUCTIVITY: PERSONS WORKING DAILY, DAYS WORKED AND OUTPUT PER PERSON PER DAY FOR THE WESTERN STATES, 1976

	Average Number of Persons Working Daily			Average Number of Days Worked		Average Tons Per Person Per Day		
	Under-ground	Surface	Total	Under-ground	Surface	Under-ground	Surface	Total
Alaska	--	80	80	--	250	--	35.31	35.31
Arizona	--	560	560	--	271	--	69.12	69.12
Arkansas	30	220	250	226	293	W	7.74	7.45
Colorado	1,310	470	1,780	206	239	12.13	55.08	24.68
Iowa	60	80	130*	287	214	19.19	19.10	19.14
Kansas	--	220	220	--	188	--	14.18	14.18
Missouri	--	760	760	--	350	--	22.95	22.95
Montana	--	720	720	--	304	--	120.67	120.67
New Mexico	380	640	1,020	214	243	10.16	57.53	22.95
North Dakota	--	450	450	--	286	--	87.02	87.02
Oklahoma	--	1,180	1,180	--	177	--	17.35	17.35
Texas	--	630	630	--	310	--	72.57	72.57
Utah	2,620	--	2,620	221	--	13.78	--	13.78
Washington	W	530	530	W	257	W	30.18	30.18
Wyoming	190	2,150	2,330*	302	248	9.22	56.97	52.36
Total Western:	4,590	8,690	13,260*					

W = Withheld to avoid disclosing company confidential data.

*Data do not add to totals shown due to independent rounding.

Source: Dept. of Energy, Energy Data Reports, Weekly Coal Report No. 18, Feb. 3, 1978, Table 4.

Pennsylvania, and West Virginia. Industry sources have been concerned that the low productivity in West Virginia mines may present serious problems for the ability of the state's coal industry to compete with neighboring states. Table 2-6 shows that the states of the Western Interior province show surface mining productivity figures comparable to the eastern states, but that the surface mines of the Northern Great Plains, Gulf, and Southwest Rocky Mountain states show vastly greater productivity. While none of the eastern or midwestern states shows a surface mining productivity greater than 30 tons per man-day, the figures for selected western states include 69 for Arizona, 55 for Colorado, 58 for New Mexico, 87 for North Dakota, 73 for Texas, 57 for Wyoming, and an astounding 121 tons per man-day in Montana. Much of this enormous productivity is accounted for by the great thickness of the seams of sub-bituminous coal and lignite and the relatively small amount of overburden that must be removed to get at the coal.

WORKFORCE CHARACTERISTICS

No detailed study of the coal industry workforce is available. What information may be gleaned is less reliable than the general statistics on the industry. We have found only a modest amount of information on the race, sex, ethnic and age structure of the coal mining labor force.

Blacks have worked as miners practically since the beginnings of the coal industry in the United States. A foreign visitor, the Duke de la Rouchefoucault Liancourt, reported that 500 Negro slaves were working at coal mines he visited in Virginia in 1796. Slaves were widely used in coal mining throughout Virginia in the first half of the 1800s. Slave labor was also used in the mines in Alabama in the 1850s and 1860s.[2] As the coal industry grew in the period following the Civil War, black miners composed a substantial portion of the coal industry workforce in all the southern mountain states. In 1900, blacks were 54.3 percent of the miners in Alabama, 23.7 percent in Kentucky, 28.4 percent in Tennessee, 35.9 percent in Virginia, and 22.2 percent in West Virginia.[3] As a general rule, blacks were concentrated in the unskilled and less desirable jobs in the mines. The proportion of black miners began to decline in the 1930s, and the decline was hastened by the advances in mechanization that took place in the 1950s. Discrimination prevented blacks from obtaining a proportional number of jobs running continuous miners and other advanced equipment. As jobs were cut back in the wake of mechanization, blacks were laid off in disproportionate numbers. The flourishing of small family mines in the 1950s in the Appalachians also worked against the black miner, who rarely had the capital to begin such an operation or the connections to obtain a job in one. The expansion of surface mining also worked against blacks, as few obtained employment with stripping operations.[4]

The most recent data available on black coal miners is the 1970 Census, from which the data for the eastern states is reported in

TABLE 2-7

BLACK COAL MINE EMPLOYEES IN THE EASTERN STATES, 1970

State	All Coal Mine Workers*	Black Coal Mine Workers*	% of Total
ORBES			
Illinois	9,215	79	0.9
Indiana	2,594	17	0.7
Ohio	8,890	140	1.6
Kentucky	21,480	445	2.1
Pennsylvania	27,365	369	1.3
West Virginia	40,513	1,685	4.3
Subtotal:	110,057	2,735	2.5
Non-ORBES Eastern			
Alabama	4,515	826	18.3
Maryland	482	9	1.9
Tennessee	1,630	8	0.5
Virginia	12,043	104	0.9
Subtotal:	18,670	947	5.0
Total Eastern States:	128,727	3,682	2.9
Total United States:	136,976	3,954	2.9

*Apparently includes clerical and service workers.

Sources: 1970 Census of Population, State Volumes, Table 184; Summary Volumes, Part 1, Section 2, Table 236.

Table 2-7. Coal companies in the ORBES states employed a total of 2,735 black employees (most of whom may be assumed to be miners), 2.5 percent of the total coal mining labor force in these states. West Virginia had more black miners (1,685) than any other state, although the highest proportion of black miners is found in Alabama (18.3 percent). Few young blacks are going into the mines, and blacks generally have been leaving the Appalachian states at a greater rate than whites. Behind this lie continuing patterns of discrimination in mining communities and a sense among blacks that they can find better opportunities elsewhere. It appears that blacks are rapidly disappearing from the coal industry, and in another decade or two will be found in appreciable numbers only in a few coal communities in West Virginia, Alabama, eastern Kentucky, Pennsylvania and possibly Ohio.

While blacks are leaving the coal industry, women--including a few black women--have been making inroads. With rare, scattered exceptions, there were no women working as coal miners prior to 1973. As Table 2-8 shows, during the past five years women have begun to be employed in increasing numbers in the mines. Medical examination records suggest that some 2,000 women may be employed in coal mining by late 1978, approximately one percent of the workforce. As with black miners, most women miners are employed by the large national companies. Affirmative action monitoring and advocacy have increased the opportunities for women, and have resulted in consent agreements by several large companies to hire larger proportions of women until they compose a certain proportion of the company's workforce.[6]

Table 2-8 shows that the ORBES states are the major employers of women coal miners, with over 85 percent of the women who have worked in the mines since 1973. West Virginia is the leading employer of women miners with 724, followed by Kentucky with 464, Pennsylvania with 307, Illinois with 131, and Ohio with 80. Only Indiana remains a nominal employer of women miners, with 7. It should be noted that these figures include all women who have worked in the mines at any point since 1973; not all are necessarily still working at present. In the remaining eastern states, only Virginia with 112 and Alabama with 43 are significant employers of women miners. In the western states, Utah leads with 101, followed by Colorado with 22. Figures for Montana were not included in the information from the National Institute for Occupational Safety and Health.

Detailed information on the ethnic background of coal miners is not available. Immigrants from eastern and southern Europe and their descendants have played an important role in the coal industry, particularly in Pennsylvania, West Virginia[7] and Illinois. Spanish-speaking miners compose a significant proportion of the coal mining population in the Southwest, and have worked in small enclaves in West Virginia. Native American Indians in the Southwest, whose lands are being mined for coal, are finding jobs as coal miners.

TABLE 2-8

WOMEN EMPLOYED IN COAL MINING IN THE UNITED STATES
1973 - 1978

State	1973	1974	1975	1976	1977	1978*	Cumulative
ORBES							
IL	0	9	17	19	51	35	131
IN	0	0	1	3	0	3	7
KY	0	18	65	85	184	112	464
OH	0	6	10	12	20	32	80
PA	0	15	54	67	128	43	307
WV	1	11	88	187	300	137	724
Subtotal:	1	59	235	373	683	362	1,713
Non-ORBES Eastern							
AL	0	1	5	6	10	21	43
MD	0	0	0	0	0	0	0
TN	0	0	2	0	0	0	2
VA	0	5	9	23	35	40	112
Subtotal:	0	6	16	29	45	61	157
Western							
AR	0	0	0	0	0	0	0
CO	0	1	2	8	8	3	22
IA	0	0	0	0	0	0	0
NM	0	0	0	0	0	0	0
UT	0	5	21	31	25	19	101
WA	0	0	0	0	0	0	0
WY	0	0	0	4	3	0	7
Subtotal:	0	6	23	43	36	22	130
Total United States:	1	71	274	445	764	445	2,000

*Through September 15, 1978

Source: National Institute for Occupational Safety and Health, Examination Processing Branch, Receiving Center Section, Morgantown, West Virginia, "Miners Examined by State, by Year and by Sex" (July 27, 1973 - September 15, 1978).

The age structure of the coal mining labor force can be extrapolated from a study of its membership conducted by the United Mine Workers of America in 1975. Because of the decline in the coal industry during the 1950s and 1960s, there were fewer new hires in this period than in the preceding and following periods. As a result, a graph of the numbers of coal miners by age groups has two peaks, one of miners in their mid-fifties, and one of miners in their mid to late twenties. There is a proportionate absence of miners in their mid-forties. This age curve is illustrated in Figure 2-2.[8] One consequence of this twin-peaked curve is a generation gap between older miners and those hired in the 1970s. This gap can be manifested in different expectations about the quality of life that ought to be their right in coal communities, different degrees of tolerance of hazardous working conditions and supervisors' attitudes and styles, and different concerns for contract benefits "up front" in the paycheck versus retirement benefits. The UMWA age structure can safely be extended to non-union miners in the eastern states and to underground miners in the western states. As much of the surface mining industry in the western states is of recent origin, it is likely that it has a younger workforce without the second peak of older workers. A further implication of the UMWA age structure is that the workforce will continue to grow younger on the average as the generation of miners who began their careers prior to 1950 reach retirement age over the next fifteen years. The average age of coal miners has declined from 48 in 1964 to 31 in 1978.

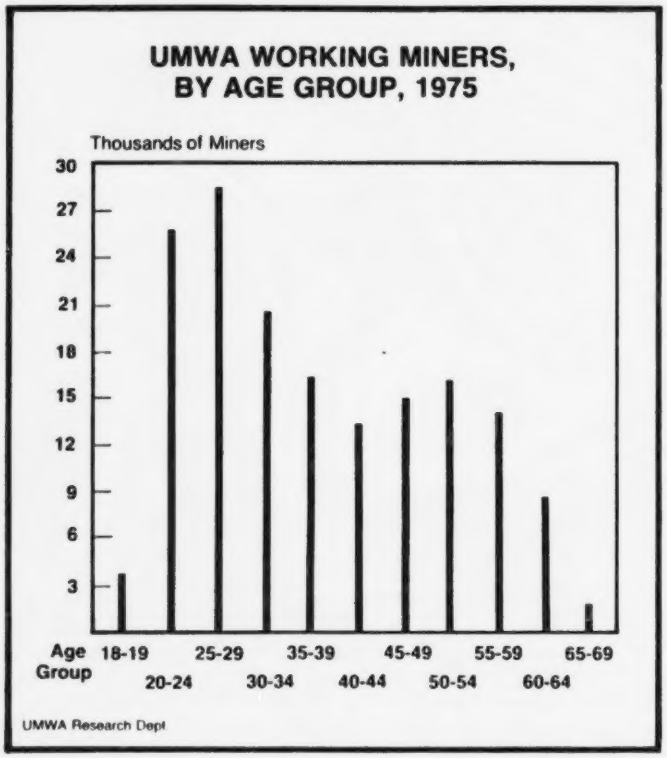


Figure 2-2.--Age distribution of UMWA working miners.

RESERVES

A 1974 study by the Geological Survey estimated the reserve base of bituminous coal and lignite in the United States to be approximately 434 billion tons, 297 billion of which could be recovered by underground mining and 137 billion by surface mining. Subsequent revisions have raised the total reserve base slightly to 438 billion tons. In addition, there is a reserve base of anthracite coal of 7 billion tons, located mostly in Pennsylvania. Table 2-9 shows the distribution of the reserve base of bituminous coal and lignite by state, as determined in 1974.

The six ORBES states are the leading eastern states in terms of coal reserves, and have 45 percent of the total national coal reserves by tonnage. Since the eastern coal reserves contain a higher btu value on the average than the western reserves, the ORBES states probably have a majority of the national coal reserves on the basis of heat value. The ORBES states have 55 percent of the national reserves recoverable by underground mining, and 23 percent of the national reserves recoverable by surface mining. Of the ORBES states reserve base, 84 percent is recoverable by underground mining and only 16 percent by surface mining. Illinois has the largest reserve base of any eastern state.

Both the non-ORBES eastern states and the states of the Western Interior province (Iowa through Oklahoma) play a relatively minor role in the total national reserve picture. Similarly, Texas in the Gulf province and Washington in the Pacific Northwest have reserves of only a local importance. In the Southwestern Rocky Mountain states, Colorado has substantial reserves, with New Mexico and Utah having modest reserves.

It is the Northern Great Plains province which contains the vast majority of the reserves in the western states. Although these reserves consist largely of lower btu sub-bituminous coal and lignite, their quantity is truly enormous. Montana has the largest reserves of any state with 108 billion tons, and Wyoming has the second largest reserves among the western states (third nationally after Illinois) with 51 billion tons. North Dakota's 16 billion tons of lignite is also substantial.

The requirements of the steel industry for coking coal draw on a more restricted range of reserves. The reserve base of premium-grade bituminous coals with a potential for coke totals 19.6 billion tons and, as Table 2-10 shows, is concentrated in West Virginia with 10.5 billion tons, eastern Kentucky with 5 billion tons, and Virginia with 1.6 billion tons, among the eastern states. In the West, there are important metallurgical coal reserves in Utah with .8 billion tons and Colorado with .6 billion tons. It should be noted that these are to be considered minimum figures as far as coking coal reserves are concerned; they do not take into account the blending of non-premium coals to make satisfactory coking coal mixtures.

TABLE 2-9

COAL RESERVE BASE OF THE UNITED STATES, JANUARY 1, 1974

State	Potential Mining Method		Total
	Underground	Surface	
	(In million tons)		
ORBES			
Illinois	53,442	12,223	65,665
Indiana	8,949	1,674	10,623
Kentucky, eastern	9,467	3,450	12,917
Kentucky, western	8,720	3,904	12,624
Ohio	17,423	3,654	21,077
Pennsylvania	29,819	1,181	31,000
West Virginia	34,378	5,212	39,590
Subtotal:	162,198	31,298	193,496
Non-ORBES Eastern			
Alabama	1,798	1,184	2,982
Georgia	1	--	1
Maryland	902	146	1,048
Michigan	118	1	119
North Carolina	31	--[a]	31
Tennessee	667	320	987
Virginia	2,971	679	3,650
Subtotal:	6,488	2,330	8,818
Western			
Alaska	4,246	7,399	11,645
Arizona	--[b]	350	350
Arkansas	402	263	665
Colorado	14,000	870	14,870
Iowa	2,885	--[b]	2,885
Kansas	--[b]	1,388	1,388
Missouri	6,074	3,414	9,488
Montana	65,165	42,562	107,727
New Mexico	2,136	2,258	4,394
North Dakota	--	16,003	16,003
Oklahoma	860	434	1,294
Oregon	1	--[a]	1
South Dakota	--	428	428
Texas	--	3,272	3,272
Utah	3,780	262	4,042
Washington	1,446	508	1,954
Wyoming	27,554	23,674	51,228
Subtotal:	128,549	103,085	231,634
Total United States:	297,235	136,713	433,948

[a] Insufficient data.

[b] Less than one million tons.

Source: Averitt, Coal Resources 1974, p. 33.

TABLE 2-10

RESERVE BASE OF IDENTIFIED PREMIUM-GRADE BITUMINOUS COALS WITH A POTENTIAL FOR COKE, JANUARY 1974
(Million Tons)

State	High Volatile Content (> 31%)	Medium Volatile Content (22-31%)	Low Volatile Content (14-22%)	Total
ORBES				
Kentucky, Eastern	4,977.03	0	0	4,977.03
Pennsylvania	487.39	0	0	487.39
West Virginia	5,323.71	2,061.59	3,075.62	10,460.92
Subtotal:	10,788.13	2,061.59	3,075.62	15,925.34
Non-ORBES Eastern				
Alabama	173.41	21.22	0	194.63
Georgia	0	0	.33	.33
Maryland	0	0	9.83	9.83
Tennessee	204.04	0	0	204.04
Virginia	734.00	882.11	12.37	1,628.48
Subtotal:	1,111.45	903.33	22.53	2,037.31
Western				
Arkansas	0	0	20.00	20.00
Colorado	611.84	0	0	611.84
Oklahoma	113.70	41.54	13.81	169.05
Utah	782.24	0	0	782.24
Washington	6.97	0	0	6.97
Subtotal:	1,514.75	41.54	33.81	1,590.10
Total United States:	13,414.33	3,006.46	3,131.96	19,552.75

Source: U. S. Bureau of Mines, reprinted in Kentucky Coal Journal, December 1975, p. 16.

Ownership of reserves differs substantially by region. Generally speaking, coal reserves in the Appalachian, Eastern Interior and Western Interior provinces are in private ownership. In the Appalachian states there are substantial tracts owned by steel corporations, electric utilities, coal companies, and land companies. Individuals and small companies own numerous parcels of coal lands. In the Eastern Interior fields, large tracts are owned by the leading coal producers in that region; other reserves are found under family-owned farms. In Texas, electric utilities and oil companies are rapidly buying up rights to lignite reserves. In the Northern Great Plains, the federal government owns over half the coal reserves. Railroads own substantial tracts along their lines. Indian tribes control substantial reserves there and in the Southwestern states. Utilities, oil and coal companies hold substantial blocks of reserves throughout the West. Steel companies have important holdings in Utah and Colorado.

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[2] Howard Eavenson, First Century and a Quarter of American Coal Industry (Pittsburgh, PA: privately printed, 1942).

[3] Herbert R. Northrup, "The Negro and the United Mine Workers of America," Southern Economic Journal, 9 (April 1943), 314.

[4] Darold T. Barnum, The Negro in the Bituminous Coal Mining Industry (Philadelphia, PA: Univ. of Pennsylvania Press, 1970).

[5] Whether the net out-migration of blacks from Appalachia was reversed during the 1970s, as it apparently was for whites, will remain to be seen in the 1980 Census of Population.

[6] Two informative booklets, "Women in the Coal Industry" and "Coal Mining Women: A Story of Pioneers," dated April 1978, are available from the Coal Employment Project, P.O. Box 3195, Oak Ridge, TN 37830.

[7] Kenneth R. Bailey, "A Judicious Mixture: Negroes and Immigrants in the West Virginia Mines, 1880-1917," West Virginia History, 24 (January 1973), 141-61.

[8] "It's Your Union. Pass It On," Officers' Report to the United Mine Workers of America 47th Constitutional Convention, September 1976, p. 24.

CHAPTER III

COAL PRODUCTION AND EMPLOYMENT BY COUNTY IN THE EASTERN STATES

THE ORBES STATES

The six ORBES states accounted for 69 percent (468.8 million tons) of national coal production and 79.6 percent (161,060 workers) of national coal employment in 1976, according to U.S. Department of Energy figures. Table 3-1 provides a more detailed breakdown by state of the number of mines, tonnage, and employees, underground and surface, for each state. These figures are taken from the state reports on the coal industry, not the federal statistical reports (with the exception of data on employment for Indiana); somewhat different reporting procedures are used, and the figures do not coincide with the data from the federal reports used above and in Chapter II. Federal employment figures are based on average daily employment, while Kentucky, for example, appears to include all persons employed at any point in the year.[1]

In 1976, the six ORBES states had a total of 6,695 coal mines (2,444 underground and 4,251 surface) that produced a total of 468.7 million tons (244.4 million underground and 224.2 million surface), employing a total of 173,131 workers (120,762 underground and 52,369 surface), according to state report data. Underground mining thus accounted for 37 percent of the mines, 52 percent of the tonnage, and 70 percent of the employees. Surface mining accounted for 63 percent of the mines, 48 percent of the tonnage, and only 30 percent of the employees in the bituminous coal industry in the six states.

In 1976 there were 200 bituminous coal producing counties in the six-state ORBES region. In addition, there were 9 bituminous coal producing counties and 9 anthracite producing counties in Pennsylvania that are not within the boundaries of the ORBES region. There were 42 additional coal producing counties in the remaining non-ORBES eastern states, and 71 coal and lignite producing counties in the western states, for a total of some 289 coal producing counties in 1976 in the coterminous United States (not including Alaska). The ORBES region had 36 of the 50 counties in the U.S. that produced over 5 million tons of coal and 51 of the 77 counties that produced from one to five million tons of coal in 1976.

The following sections detail coal production and employment, underground and surface, by county in 1976 and 1977 for the eastern states. We have included information about coal employment as a percentage of total county employment and mining payroll as a percentage of total county payroll in 1976 for those states for which data could be obtained. Average weekly mining salaries are reported for counties when available.

TABLE 3-1

COAL MINES, PRODUCTION, AND EMPLOYEES, SURFACE AND UNDERGROUND, IN THE ORBES STATES, 1976

State	Number of Mines			Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total	Under-ground	Surface	Total
IL	23	39	62	30,911,696	27,224,448	58,136,144	10,396	4,392	14,788
IN	2	116	118	430,398	25,484,092	25,914,490	190	4,760	4,950
KY	1,333	1,669	3,002	64,245,115	79,014,307	143,259,422	26,645	21,610	48,255
KY(E)	1,303	1,506	2,809	40,356,759	48,620,156	88,976,915	19,702	17,079	36,781
KY(W)	30	163	193	23,888,356	30,394,151	54,282,507	6,943	4,531	11,474
OH	32	353	385	16,716,563	30,096,337	46,812,900	7,681	4,077	11,758
PA	151	1,570	1,721	44,328,580	41,419,294	85,747,874	24,079	9,499	33,578
WV	903	504	1,407	87,811,278	20,982,316	108,793,594	51,771	8,031	59,802
Totals:	2,444	4,251	6,695	244,443,630	224,220,794	468,664,424	120,762	52,369	173,131

Sources: Individual state reports, except for total employment figure for Indiana, which is taken from Dept. of Energy, Weekly Coal Report No. 21, February 24, 1978. Indiana's surface employment calculated by subtracting the state report's underground employment figure from DOE's total employment figure.

ILLINOIS

Illinois in 1976 and 1977 ranked fourth in terms of coal production both nationally and among the ORBES states. In 1978, Illinois will likely be dropped into fifth place by Wyoming. In terms of employment in 1976, Illinois ranked fifth nationally and among the ORBES states.[2]

In 1976, Illinois had a total of 62 coal mines (23 underground and 39 surface) that produced a total of 58.1 million tons (30.9 million underground and 27.2 million surface) and employed a total of 14,788 workers (10,396 underground and 4,392 surface). Underground mining thus accounted for 37 percent of the mines, 53 percent of the tonnage, and 70 percent of the employees. Surface mining accounted for 63 percent of the mines, 47 percent of the tonnage, and only 30 percent of the employees in 1976. Figure 3-1 is a map identifying Illinois coal producing counties in 1976. Tables 3-2 and 3-3 detail and rank production by county for 1976.

In 1977, Illinois had a total of 70 coal mines (25 underground and 45 surface) that produced a total of 53.9 million tons (29.6 million underground and 24.3 million surface) and employed a total of 16,114 workers (11,375 underground and 4,739 surface). Underground mining thus accounted for 36 percent of the mines, 55 percent of the tonnage, and 71 percent of the employees. Surface mining accounted for 64 percent of the mines, 45 percent of the tonnage, and only 29 percent of the employees. Tables 3-4 and 3-5 detail and rank production by county for 1977.

Illinois had 19 coal producing counties in 1976 and 21 in 1977. In 1976, 15 counties produced over one million tons, three of which produced over 5 million tons, and one of these, Perry, produced over 10 million tons. In 1977, 16 counties produced over a million tons, two of which produced over 5 million. Over a thousand miners were employed in each of 5 counties in 1976, in each of 6 counties in 1977. We were not able to obtain information on coal mining payrolls or average weekly wages by county from state agencies in Illinois.

The major problem facing the coal industry in Illinois is the high sulfur content of its coal. According to the Illinois Geological Survey, over 95 percent of the state's coal reserves contain between 3 and 5 percent sulfur; less than 3 percent of the reserves contain 1.5 percent sulfur or less. In recent years, Illinois coal shipped to electric utilities has averaged around 4 percent sulfur. Air pollution standards of the Environmental Protection Agency thus make Illinois coal vulnerable to competition from lower sulfur coal from western fields. Some 30 percent of the coal purchased by electric utilities in Illinois in 1976 and 1977 came from Wyoming and Montana.

ILLINOIS 1976

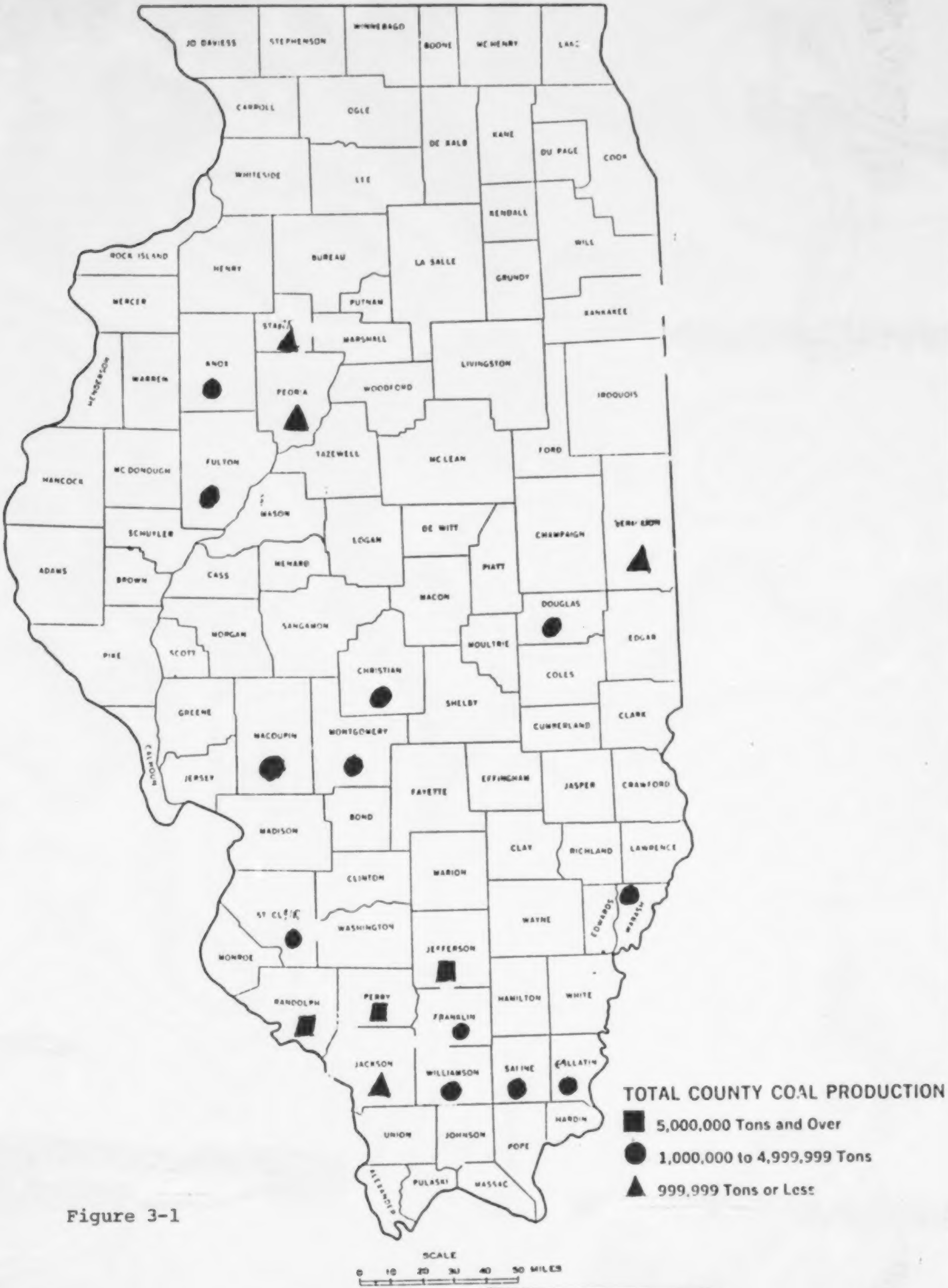
JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MC HENRY
LAKE
CARROLL
OGLE
DE KALB
KANE
DU PAGE
COOK
WHITESIDE
LEE
KENDALL
WILL
ROCK ISLAND
HENRY
BUREAU
LA SALLE
GRUNDY
MERCER
PUTNAM
KANKAKEE
STARK
MARSHALL
HENDERSON
WARREN
KNOX
PEORIA
WOODFORD
LIVINGSTON
IROQUOIS
FULTON
TAZEWELL
MC LEAN
FORD
HANCOCK
MC DONOUGH
MASON
SCHUYLER
LOGAN
DE WITT
CHAMPAIGN
VERMILION
ADAMS
BROWN
CASS
MENARD
PIATT
MACON
DOUGLAS
PIKE
SCOTT
MORGAN
SANGAMON
MOULTRIE
EDGAR
CHRISTIAN
COLES
SHELBY
GREENE
CLARK
MACOUPIN
MONTGOMERY
CUMBERLAND
CALHOUN
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
CLAY
RICHLAND
LAWRENCE
CLINTON
MARION
ST CLAIR
WASHINGTON
WAYNE
EDWARDS
WABASH
MONROE
JEFFERSON
RANDOLPH
PERRY
HAMILTON
WHITE
FRANKLIN
JACKSON
WILLIAMSON
SALINE
GALLATIN
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less
SCALE
0 10 20 30 40 50 MILES

Figure 3-1

Reproduced from
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TABLE 3-2

ILLINOIS COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Totals		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Christian	1	3,278,065	892	--	--	--	1	3,278,065	892
Douglas	2	2,776,756	769	--	--	--	2	2,776,756	769
Franklin	3	4,927,675	1,613	--	--	--	3	4,927,675	1,613
Fulton	--	--	--	4	2,888,718	670	4	2,888,718	670
Gallatin	1	1,324,826	601	1	527,064	162	2	1,851,890	763
Jackson	--	--	--	5	761,474	270	5	761,474	270
Jefferson	3	4,667,694	1,973	1	504,430	81	4	5,172,124	2,054
Knox	--	--	--	1	1,534,248	224	1	1,534,248	224
Macoupin	2	3,257,007	856	--	--	--	2	3,257,007	856
Montgomery	1	1,784,478	511	--	--	--	1	1,784,478	511
Peoria	--	--	--	1	716,653	192	1	716,653	192
Perry	--	--	--	5	11,378,602	1,275	5	11,378,602	1,275
Randolph	3	2,682,475	886	4	5,425,092	812	7	8,107,567	1,698
St. Clair	1	1,982,082	582	1	448,825	64	2	2,430,907	646
Saline	2	1,097,751	459	3	962,888	170	5	2,060,639	629
Stark	--	--	--	1	298,319	82	1	298,319	82
Vermilion	--	--	--	1	79,058	7	1	79,058	7
Wabash	1	1,822,854	630	--	--	--	1	1,822,854	630
Williamson	3	1,310,033	624	11	1,699,077	383	14	3,009,110	1,007
Totals:	23	30,911,696	10,396	39	27,224,448	4,392	62	58,136,144	14,788

Source: Illinois Dept. of Mines and Minerals, Annual Report, 1976.

TABLE 3-3

ILLINOIS COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1976

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Perry	11,378,602	19.57	1,275	8.62
Randolph	8,107,567	13.95	1,698	11.48
Jefferson	5,172,124	8.89	2,054	13.89
Franklin	4,927,675	8.48	1,613	10.91
Christian	3,278,065	5.63	892	6.03
Macoupin	3,257,007	5.60	856	5.79
Williamson	3,009,110	5.18	1,007	6.81
Fulton	2,888,718	4.97	670	4.53
Douglas	2,776,756	4.78	769	5.20
St. Clair	2,430,907	4.18	646	4.37
Saline	2,060,639	3.54	629	4.25
Gallatin	1,851,890	3.19	763	5.16
Wabash	1,822,854	3.14	630	4.26
Montgomery	1,784,478	3.07	511	3.46
Knox	1,534,248	2.64	224	1.51
Jackson	761,474	1.31	270	1.83
Peoria	716,653	1.23	192	1.30
Stark	298,319	0.51	82	0.55
Vermilion	79,058	0.14	7	0.05
Totals:	58,136,144	99.40	14,788	100.00

Source: Illinois Department of Mines and Minerals, Annual Coal, Oil and Gas Report, 1976.

TABLE 3-4

ILLINOIS COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Christian	1	2,807,593	931	--	--	--	1	2,807,593	931
Clinton	1	99,504	151	--	--	--	1	99,504	151
Douglas	2	2,677,394	776	--	--	--	2	2,677,394	776
Franklin	4	4,750,772	1,905	--	--	--	4	4,750,772	1,905
Fulton	--	--	--	4	2,759,200	744	4	2,759,200	744
Gallatin	1	1,075,785	614	1	530,629	181	2	1,606,414	795
Jackson	--	--	--	5	1,467,700	307	5	1,467,700	307
Jefferson	3	4,333,868	2,068	1	434,219	85	4	4,768,087	2,153
Johnson	--	--	--	1	1,100	3	1	1,100	3
Knox	--	--	--	1	1,151,893	240	1	1,151,893	240
Macoupin	2	3,622,966	1,039	--	--	--	2	3,622,966	1,039
Montgomery	1	1,854,058	559	--	--	--	1	1,854,058	559
Peoria	--	--	--	1	917,492	215	1	917,492	215
Perry	--	--	--	5	9,559,010	1,405	5	9,559,010	1,405
Randolph	3	2,573,187	953	4	4,581,057	777	7	7,154,244	1,730
St. Clair	1	1,775,574	588	1	449,735	140	2	2,225,309	728
Saline	2	968,359	479	4	839,357	182	6	1,807,716	661
Stark	--	--	--	1	110,187	11	1	110,187	11
Vermilion	--	--	--	1	121,560	8	1	121,560	8
Wabash	1	1,717,690	661	--	--	--	1	1,717,690	661
Williamson	3	1,332,227	651	15	1,368,318	441	18	2,700,545	1,092
Total:	25	29,588,977	11,375	45	24,291,457	4,739	70	53,880,434	16,114

Source: Illinois Dept. of Mines and Minerals, Annual Coal, Oil and Gas Report, 1977.

TABLE 3-5

ILLINOIS COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Perry	9,559,010	17.74	1,405	8.72
Randolph	7,154,244	13.28	1,730	10.74
Jefferson	4,768,087	8.85	2,153	13.36
Franklin	4,750,772	8.82	1,905	11.82
Macoupin	3,622,966	6.72	1,039	6.45
Christian	2,807,593	5.33	931	5.78
Fulton	2,759,200	5.12	744	4.62
Williamson	2,700,545	5.01	1,092	6.78
Douglas	2,677,394	4.97	776	4.81
St. Clair	2,225,309	4.13	728	4.52
Montgomery	1,854,058	3.44	559	3.47
Saline	1,807,716	3.35	661	4.10
Wabash	1,717,690	3.19	661	4.10
Gallatin	1,606,414	2.98	795	4.93
Jackson	1,467,700	2.72	307	1.90
Knox	1,151,893	2.14	240	1.49
Peoria	917,492	1.70	215	1.33
Vermilion	121,560	0.22	8	0.05
Stark	110,187	0.20	11	0.07
Clinton	99,504	0.18	151	0.94
Johnson	1,100	0.002	3	0.02
Totals:	53,880,434	100.09	16,114	100.00

Source: Illinois Dept. of Mines and Minerals, Annual Coal, Oil and Gas Report, 1977.

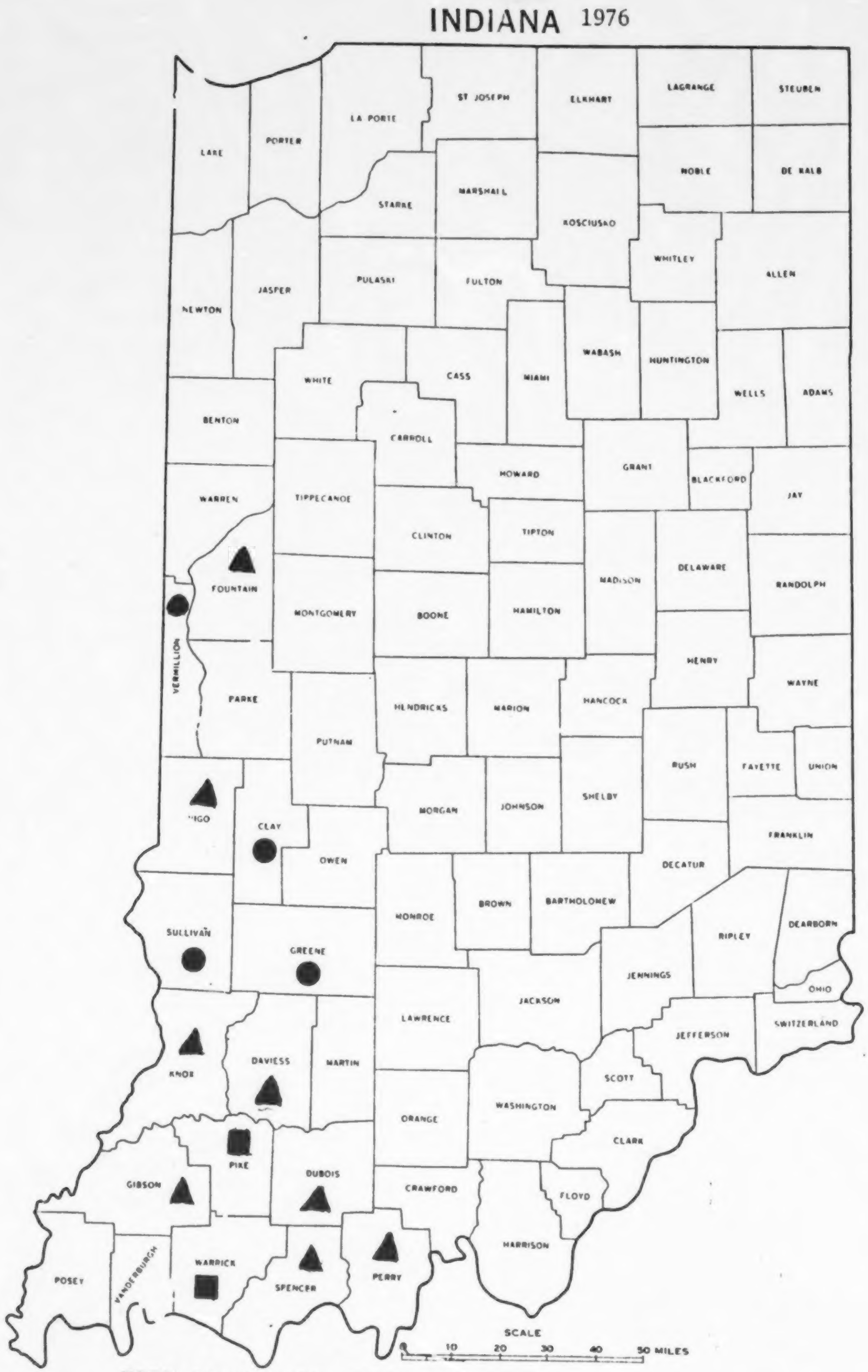
INDIANA

Indiana in 1976 and 1977 ranked sixth in coal production among the ORBES states and ninth nationally, behind Wyoming, Virginia and Montana. In terms of employment in 1976, Indiana ranked sixth among the ORBES states and eighth nationally, behind Virginia and Alabama.[3]

In 1976, Indiana had a total of 118 coal mines reporting to the state (2 underground and 116 surface reporting), that produced a total of 25.9 million reported tons (430 thousand underground and 25.5 surface reporting) and employed a total of 4,950 workers (190 underground and 4,760 surface). Only underground mines are required to report to the state in Indiana. Underground mining thus accounted for 2 percent of the mines, 2 percent of the tonnage, and 2 percent of the employment. Surface mining accounted for 98 percent of the mines, tonnage, and employment in 1976. Figure 3-2 is a map identifying Indiana coal producing counties in 1976. Table 3-6 details and ranks production and employment by county for 1976.

In 1976, coal was produced in 16 Indiana counties. Over a million tons were produced in each of 6 counties; 2 counties produced over 5 million tons. No figures on employment in surface mines are included in the Indiana state report. We were not able to obtain information on coal mining payrolls or average weekly wages by county from state agencies in Indiana.

As is the case with Illinois, most of the coal reserves of Indiana are high in sulfur content, thus being vulnerable to competition from lower sulfur western coal under certain air pollution standards. Some 10 percent of the coal purchases by electric utilities in Indiana in 1976 and 1977 came from Wyoming and Montana.


INDIANA 1976
LAKE
PORTER
LA PORTE
ST JOSEPH
ELKHART
LAGRANGE
STEUBEN
STARKE
MARSHALL
KOSCIUSKO
NOBLE
DE KALB
NEWTON
JASPER
PULASKI
FULTON
WHITLEY
ALLEN
WHITE
CASS
MIAMI
WABASH
HUNTINGTON
WELLS
ADAMS
BENTON
CARROLL
HOWARD
GRANT
BLACKFORD
JAY
WARREN
TIPPECANOE
CLINTON
TIPTON
MADISON
DELAWARE
RANDOLPH
FOUNTAIN
MONTGOMERY
BOONE
HAMILTON
VERMILLION
PARKE
PUTNAM
HENDRICKS
MARION
HANCOCK
HENRY
WAYNE
RUSH
FAYETTE
UNION
VIGO
CLAY
OWEN
MORGAN
JOHNSON
SHELBY
FRANKLIN
DECATUR
MONROE
BROWN
BARTHOLOMEW
SULLIVAN
GREENE
RIPLEY
DEARBORN
JENNINGS
JACKSON
LAWRENCE
OHIO
SWITZERLAND
JEFFERSON
KNOX
DAVIESS
MARTIN
SCOTT
WASHINGTON
ORANGE
CLARK
PIKE
GIBSON
DUBOIS
CRAWFORD
FLOYD
HARRISON
POSEY
VANDERBURGH
WARRICK
SPENCER
PERRY
SCALE
0 10 20 30 40 50 MILES

TOTAL COUNTY COAL PRODUCTION

- ■ 5,000,000 Tons and Over
- ● 1,000,000 to 4,999,999 Tons
- ▲ 999,999 Tons or Less

Figure 3-2

TABLE 3-6

INDIANA COAL PRODUCTION, RANKED BY COUNTY, 1976

County	Reported Production	Percent of State
Warrick	9,590,294	37.00
Pike	5,821,360	22.46
Vermillion	2,695,147	10.40
Sullivan	2,225,823	8.59
Greene	1,832,751	7.07
Clay	1,294,584	4.99
Knox	983,137	3.79
Spencer	599,051	2.31
Gibson	418,839	1.62
Dubois	279,932	1.08
Daviess	110,369	0.43
Fountain	41,347	0.16
Perry	40,656	0.15
Vigo	26,200	0.10
Martin	--	--
Owen	--	--
Totals:	25,914,490	100.17

Source: Indiana Bureau of Mines and Mining, Annual Report, 1976.

KENTUCKY

Kentucky in 1976 and 1977 ranked first in coal production both among the ORBES states and nationally. By 1982 or 1983, if projections hold, Wyoming may take the lead from Kentucky in terms of tonnage produced. Because of the lower Btu value of Wyoming's sub-bituminous coal, Kentucky will probably continue to lead the nation in terms of energy content of coal produced for some years to come. In terms of employment, Kentucky ranked second nationally and among the ORBES states behind West Virginia in 1976 and 1977.[4]

In 1976 Kentucky had a total of 3,002 coal mines statewide (1,333 underground and 1,669 surface) that produced 143.3 million tons (64.2 million underground and 79 million surface) and employed a total of 48,255 workers (26,645 underground and 21,610 surface). Underground mining thus accounted for 44 percent of the mines, 45 percent of the tonnage, and 55 percent of the employees statewide. Surface mining accounted for 56 percent of the mines, 55 percent of the tonnage, and 45 percent of the employees statewise in 1976. Figure 3-3 is a map identifying Kentucky coal producing counties in 1976.

In 1977 Kentucky had a total of 3,311 coal mines statewide (1,536 underground and 1,775 surface) that produced 147.6 million tons (64.3 million underground and 83.3 million surface) and employed a total of 56,742 workers (29,925 underground and 26,817 surface). Underground mining thus accounted for 46 percent of the mines, 44 percent of the tonnage, and 53 percent of the employment. Surface mining accounted for 54 percent of the mines, 56 percent of the tonnage, and 47 percent of the employment in 1977.

Kentucky had 44 coal producing counties in 1976 and 46 in 1977. In 1976, 22 counties produced over a million tons each, 9 of which produced over 5 million tons each, and 3 of these produced over 10 million tons each. In 1977, 24 counties produced over a million tons each, 12 of which produced over 5 million tons each, and 4 of these produced over 10 million tons each. Over a thousand miners were employed in each of 16 counties in 1976 and 17 counties in 1977.

Kentucky is unique among the states in having two distinct and widely separated coal producing regions. The eastern Kentucky coalfields are part of the Appalachian province, and the western Kentucky coalfields are part of the Eastern Interior province, or Illinois basin. We will consider each of these regions separately as we tabulate production and employment by county.

KENTUCKY 1976

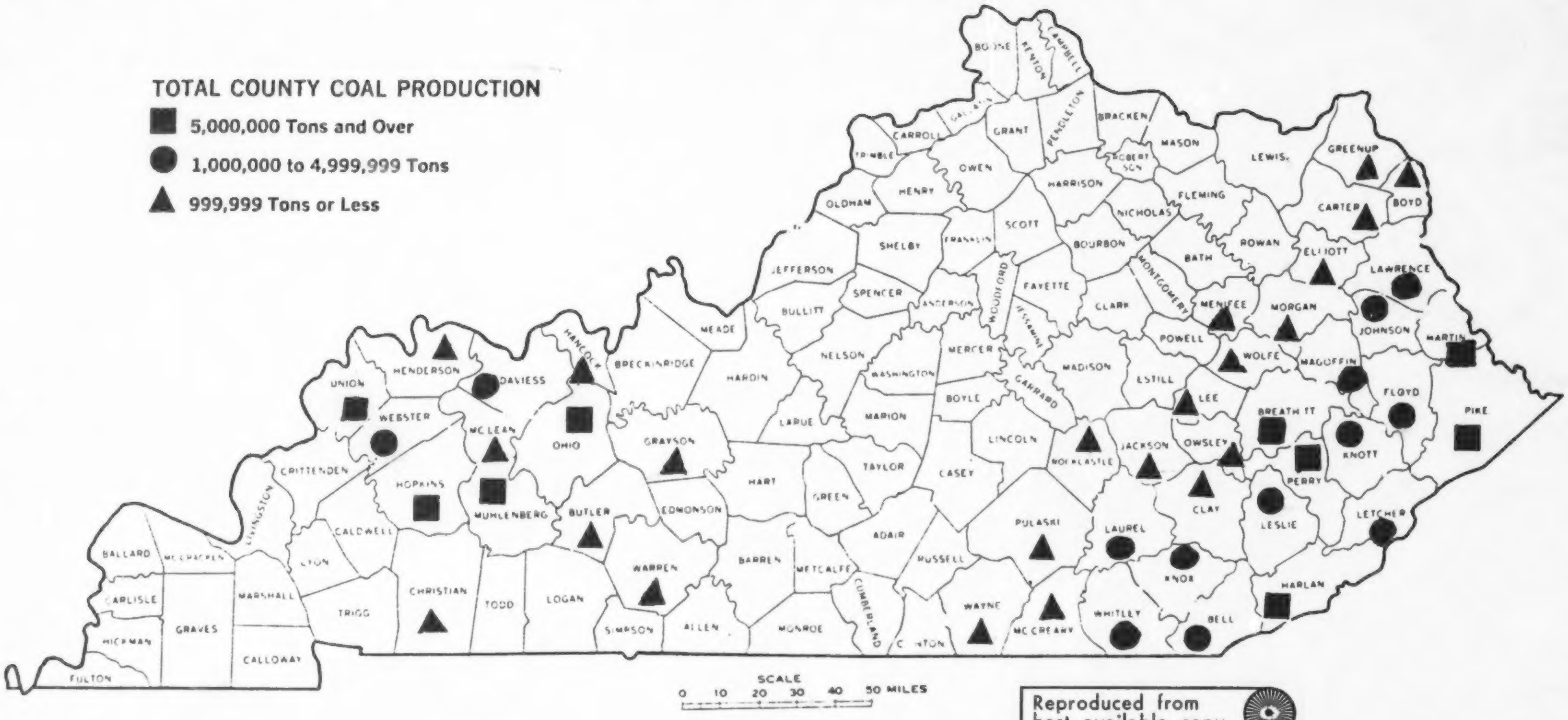

TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less
BALLARD
McCRACKEN
CARLISLE
HICKMAN
FULTON
GRAVES
MARSHALL
CALLOWAY
LIVINGSTON
CRITTENDEN
LYON
TRIGG
CALDWELL
UNION
WEBSTER
HENDERSON
HOPKINS
CHRISTIAN
DAVIESS
McLEAN
MUHLENBERG
TODD
HANCOCK
OHIO
BUTLER
LOGAN
BRECKINRIDGE
GRAYSON
WARREN
SIMPSON
EDMONSON
ALLEN
MEADE
HARDIN
HART
BARREN
MONROE
JEFFERSON
BULLITT
LARUE
NELSON
GREEN
METCALFE
CUMBERLAND
OLDHAM
TRIMBLE
CARROLL
GALLATIN
BOONE
KENTON
CAMPBELL
GRANT
PENDLETON
BRACKEN
HENRY
OWEN
SHELBY
SPENCER
FRANKLIN
ANDERSON
WASHINGTON
MARION
TAYLOR
ADAIR
RUSSELL
CLINTON
SCOTT
WOODFORD
FAYETTE
JESSAMINE
MERCER
BOYLE
CASEY
HARRISON
ROBERTSON
MASON
BOURBON
NICHOLAS
FLEMING
CLARK
MADISON
GARRARD
LINCOLN
PULASKI
WAYNE
MONTGOMERY
BATH
ROWAN
LEWIS
POWELL
ESTILL
ROCKCASTLE
LAUREL
WHITLEY
McCREARY
MENIFEE
WOLFE
LEE
JACKSON
OWSLEY
CLAY
KNOX
BELL
GREENUP
CARTER
ELLIOTT
MORGAN
MAGOFFIN
BREATHITT
PERRY
LESLIE
HARLAN
BOYD
LAWRENCE
JOHNSON
FLOYD
KNOTT
LETCHER
MARTIN
PIKE
SCALE
0 10 20 30 40 50 MILES

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Figure 3-3

EASTERN KENTUCKY

In 1976 eastern Kentucky had a total of 2,809 coal mines (1,303 underground and 1,506 surface) that produced 89.0 million tons (40.4 million underground and 48.6 surface) and employed 36,781 workers (19,702 underground and 17,079 surface). Underground mining accounted for 46 percent of the mines, 45 percent of the tonnage, and 54 percent of the employees. Surface mining accounted for 54 percent of the mines, 55 percent of the tonnage, and 46 percent of the employees in 1976. Tables 3-7 and 3-8 detail and rank production by county for 1976.

In 1977 eastern Kentucky had a total of 3,096 coal mines (1,503 underground and 1,593 surface) that produced 95.9 million tons (41.5 million underground and 54.5 surface) and employed 43,970 workers (22,216 underground and 21,754 surface). Underground mining accounted for 49 percent of the mines, 43 percent of the tonnage, and 51 percent of the employees. Surface mining accounted for 51 percent of the mines, 57 percent of the tonnage, and 49 percent of the employees in 1977. Tables 3-9 and 3-10 detail and rank production by county for 1977.

Eastern Kentucky had 31 coal producing counties in 1976 and 1977. In 1976, 16 counties produced over a million tons each, 5 of these producing over 5 million tons each, and 2 of these produced over 10 million tons each. In 1977, 18 counties produced over a million tons each, 8 of these producing over 5 million tons each, and 2 of these, Pike and Harlan, produced over 10 million tons each. Over a thousand miners were employed in each of 12 counties in 1976 and 13 counties in 1977.

Mining employment and payroll as a proportion of total county employment and payroll in eastern Kentucky are detailed for 1976 in Tables 3-11 and 3-12. These tables are based on unemployment insurance data for all mining and quarrying, but offer a fair correspondence to the employment figures listed in the state Department of Mines and Minerals report. For certain counties--Breathitt, Knott, Martin, for example--the employment figures in these tables appear to be too low by a substantial margin. Nevertheless, the tables show that mining employment is over 20 percent of all employment in 14 counties, and over 50 percent of all employment in 3 counties. In every case, mining's proportion of county payroll is higher than its proportion of county employment, suggesting that mining wages were above county average wages in all the mining counties. In 9 counties, mining provided over half the county payroll. The average weekly mining salary was highest in Martin County, $402.21.

Eastern Kentucky's steam coal is relatively low in sulfur and serves a wide market area. Many small companies produce for the steam coal spot market and are subject to its fluctuations. Production of metallurgical coal is subject to fluctuations in demand from the steel industry.

TABLE 3-7

EASTERN KENTUCKY COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Bell	25	1,260,047	502	55	3,263,950	1,007	80	4,523,997	1,509
Boyd	--	--	--	8	267,345	75	8	267,345	75
Breathitt	7	20,635	21	74	6,352,073	1,139	81	6,372,708	1,160
Carter	1	472	2	43	333,430	318	44	333,902	320
Clay	30	221,243	225	56	569,828	370	86	791,071	595
Elliott	--	--	--	18	373,234	183	18	373,234	183
Floyd	119	2,214,695	1,026	64	2,346,878	638	183	4,561,573	1,664
Greenup	--	--	--	17	102,050	110	17	102,050	110
Harlan	160	8,564,246	3,226	81	1,938,478	724	241	10,502,724	3,950
Jackson	3	202,078	99	27	605,040	154	30	807,118	253
Johnson	7	90,091	95	90	2,719,413	1,156	97	2,809,504	1,251
Knott	115	2,785,781	1,659	62	1,535,067	462	177	4,320,848	2,121
Knox	22	118,192	154	52	993,331	470	74	1,111,523	624
Laurel	6	32,010	98	73	1,173,261	698	79	1,205,271	796
Lawrence	--	--	--	35	1,166,374	471	35	1,166,374	471
Lee	--	--	--	14	276,812	152	14	276,812	152
Leslie	124	1,885,304	747	90	2,524,854	696	214	4,410,158	1,443
Letcher	150	2,866,504	2,143	48	1,259,104	332	198	4,125,608	2,475
McCreary	5	362,419	260	8	244,850	84	13	607,269	344
Magoffin	9	71,707	68	48	2,171,237	902	57	2,242,944	970
Martin	29	2,796,512	1,099	66	5,363,461	2,026	95	8,159,973	3,125
Menifee	--	--	--	2	2,550	6	2	2,550	6
Morgan	--	--	--	41	604,393	376	41	604,393	376

(Continued)

Table 3- 7 Continued

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Owsley	1	30,000	8	21	264,595	176	22	294,595	184
Perry	70	2,366,256	1,319	150	5,106,995	1,933	220	7,473,251	3,252
Pike	407	14,219,923	6,807	138	4,782,078	1,141	545	19,002,001	7,948
Pulaski	6	139,610	77	8	321,679	118	14	461,289	195
Rockcastle	1	500	2	9	54,327	57	10	54,827	59
Wayne	--	--	--	4	168,551	53	4	168,551	53
Whitley	6	108,534	65	93	1,389,424	991	99	1,497,958	1,056
Wolfe	--	--	--	11	345,496	61	11	345,496	61
Totals:	1,303	40,356,759	19,702	1,506	48,620,156	17,079	2,809	88,976,915	36,781

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1976.

TABLE 3-8

EASTERN KENTUCKY COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1976

County	Production		Employees	
	Tonnage	% of KY (E) Total	Number	% of KY (E) Total
Pike	19,002,001	21.36	7,948	21.60
Harlan	10,502,724	11.80	3,950	10.74
Martin	8,159,973	9.17	3,125	8.50
Perry	7,473,251	8.40	3,252	8.84
Breathitt	6,372,708	7.16	1,160	3.15
Floyd	4,561,573	5.13	1,664	4.52
Bell	4,523,997	5.08	1,509	4.10
Leslie	4,410,158	4.96	1,443	3.92
Knott	4,320,848	4.86	2,121	5.77
Letcher	4,125,608	4.64	2,475	6.73
Johnson	2,809,504	3.16	1,251	3.40
Magoffin	2,242,944	2.52	970	2.64
Whitley	1,497,958	1.68	1,056	2.87
Laurel	1,205,271	1.35	796	2.16
Lawrence	1,166,374	1.31	471	1.28
Knox	1,111,523	1.25	624	1.70
Jackson	807,118	0.91	253	0.69
Clay	791,071	0.89	595	1.62
McCreary	607,269	0.68	344	0.94
Morgan	604,393	0.68	376	1.02
Pulaski	461,289	0.52	195	0.53
Elliott	373,234	0.42	183	0.50
Wolfe	345,496	0.39	61	0.17
Carter	333,902	0.38	320	0.87
Owsley	294,595	0.33	184	0.50
Lee	276,812	0.31	152	0.41
Boyd	267,343	0.30	75	0.20
Wayne	168,551	0.19	53	0.14
Greenup	102,050	0.11	110	0.30
Rockcastle	54,827	0.06	59	0.16
Menifee	2,550	0.002	6	0.02
Totals:	88,976,915	100.00	36,781	99.99

Source: Kentucky Department of Mines and Minerals, Annual Report, 1976.

TABLE 3-9

EASTERN KENTUCKY COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Bell	28	1,511,857	681	59	3,644,492	909	87	5,156,349	1,590
Boyd	--	--	--	13	561,125	213	13	561,125	213
Breathitt	12	97,275	61	87	5,629,078	1,199	99	5,726,353	1,260
Carter	1	4,000	5	42	405,547	326	43	409,547	331
Clay	29	371,673	379	51	876,414	531	80	1,248,087	910
Elliott	--	--	--	26	705,841	357	26	705,841	357
Floyd	167	2,635,354	1,234	52	2,909,417	633	219	5,548,771	1,867
Greenup	--	--	--	16	232,922	116	16	232,922	116
Harlan	163	9,000,062	3,998	71	1,813,598	749	234	10,813,660	4,747
Jackson	4	156,090	94	7	101,982	43	11	258,072	137
Johnson	10	122,848	144	70	2,993,057	1,367	80	3,115,905	1,511
Knott	152	2,817,900	1,879	103	2,511,334	820	255	5,329,234	2,699
Knox	12	104,614	148	65	1,390,153	920	77	1,494,767	1,068
Laurel	3	4,398	7	64	1,354,280	642	67	1,358,678	649
Lawrence	--	--	--	51	1,551,040	678	51	1,551,040	678
Lee	6	35,708	27	15	298,041	175	21	333,749	202
Leslie	115	1,839,893	813	103	2,078,378	1,080	218	3,918,271	1,893
Letcher	185	3,183,522	1,960	69	1,558,565	545	254	4,742,087	2,505
McCreary	8	189,852	110	16	466,626	206	24	656,478	316
Magoffin	11	72,421	77	48	2,150,735	729	59	2,223,156	806
Martin	36	2,645,751	1,368	61	6,297,782	3,378	97	8,943,533	4,746
Menifee	--	--	--	1	16,217	14	1	16,217	14
Morgan	1	22,000	5	40	1,094,047	758	41	1,116,047	763

(Continued)

Table 3- 9 Continued

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Owsley	2	--	--	23	499,747	227	25	499,747	227
Perry	89	2,534,125	1,495	174	6,127,865	2,278	263	8,661,990	3,773
Pike	462	13,963,233	7,616	124	4,024,995	1,058	586	17,988,228	8,674
Pulaski	4	52,500	31	11	396,770	150	15	449,270	181
Rockcastle	--	--	--	7	20,548	29	7	20,548	29
Wayne	--	--	--	9	284,266	121	9	284,266	121
Whitley	3	103,425	84	105	1,982,334	1,339	108	2,085,759	1,423
Wolfe	--	--	--	10	483,296	164	10	483,296	164
Totals:	1,503	41,472,501	22,216	1,593	54,460,492	21,754	3,096	95,932,993	43,970

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1977.

TABLE 3- 10

EASTERN KENTUCKY COAL PRODUCTION AND EMPLOYMENT
RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Pike	17,988,228	18.75	8,674	19.73
Harlan	10,813,660	11.27	4,747	10.80
Martin	8,943,533	9.32	4,746	10.79
Perry	8,661,990	9.03	3,773	8.58
Breathitt	5,726,353	5.97	1,260	2.86
Floyd	5,548,771	5.78	1,867	4.25
Knott	5,329,234	5.55	2,699	6.14
Bell	5,156,349	5.37	1,590	3.62
Letcher	4,742,087	4.94	2,505	6.70
Leslie	3,918,271	4.08	1,893	4.31
Johnson	3,115,905	3.25	1,511	3.44
Magoffin	2,223,156	2.32	806	1.83
Whitley	2,085,759	2.17	1,423	3.24
Lawrence	1,551,040	1.62	678	1.54
Knox	1,494,767	1.56	1,068	2.43
Laurel	1,358,678	1.42	649	1.48
Clay	1,248,087	1.30	910	2.07
Morgan	1,116,047	1.16	763	1.73
Elliott	705,841	0.73	357	0.81
McCreary	656,478	0.68	316	0.72
Boyd	561,125	0.58	213	0.48
Owsley	499,747	0.52	227	0.51
Wolfe	483,296	0.50	164	0.37
Pulaski	449,270	0.47	181	0.41
Carter	409,547	0.43	331	0.75
Lee	333,749	0.35	202	0.46
Wayne	284,266	0.30	121	0.27
Jackson	258,072	0.27	137	0.31
Greenup	232,922	0.24	116	0.26
Rockcastle	20,548	0.02	29	0.06
Menifee	16,217	0.01	14	0.03
Totals:	95,932,993	100.04	43,970	100.99

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1977.

TABLE 3-11

EASTERN KENTUCKY COUNTY MINING EMPLOYMENT, 1976

	Total County Employment	Mining & Quarrying Employment	
		Number*	% of Total
	-----------(monthly average)------------		
Bell	7,122	1,380	19.4
Boyd	19,907	171	0.9
Breathitt	1,586	380	24.0
Carter	2,606	215	8.3
Clay	2,832	1,109	39.2
Elliott	588	413	70.2
Floyd	7,909	2,942	37.2
Greenup	6,206	28	0.5
Harlan	8,539	3,527	41.3
Jackson	713	68	9.5
Johnson	3,905	711	18.2
Knott	1,543	718	46.5
Knox	3,473	465	13.4
Laurel	8,458	396	4.7
Lawrence	1,519	139	9.2
Lee	680	236	34.7
Leslie	1,054	352	33.4
Letcher	5,059	2,722	53.8
McCreary	1,008	85	8.4
Magoffin	987	292	29.6
Martin	2,450	1,828	74.6
Menifee	213	NA	--
Morgan	1,449	234	16.1
Owsley	232	59	25.4
Perry	6,754	3,031	44.9
Pike	15,368	7,977	51.9
Pulaski	10,119	190	1.9
Rockcastle	771	27	3.5
Wayne	2,309	64	2.8
Whitley	6,744	871	12.9
Wolfe	606	89	14.7

*Bituminous Coal Mining Employment figures not reported separately.

Source: Kentucky Dept. for Human Resources, Bureau of Social Insurance, Division for Research and Special Projects, "Average Monthly Workers Covered by Kentucky Unemployment Insurance Law by Industry Division and County, Calendar Year 1976."

TABLE 3-12

EASTERN KENTUCKY COUNTY MINING AND QUARRYING PAYROLL AND AVERAGE WEEKLY SALARY, 1976

County	Total County Payroll	Mining & Quarrying Payroll		
		Amount*	% of Total	Average Weekly Salary
Bell	$ 67,684,951	$ 21,990,186	32.5	$ 306.44
Boyd	223,613,015	2,203,856	1.0	247.85
Breathitt	14,389,378	5,701,085	39.6	288.52
Carter	20,272,371	2,801,597	13.8	250.59
Clay	25,458,977	14,587,255	57.3	252.95
Elliott	7,838,089	6,867,622	87.6	319.78
Floyd	83,080,705	42,386,603	51.0	277.07
Greenup	90,988,197	423,489	0.5	290.86
Harlan	106,202,613	58,859,771	50.7	320.93
Jackson	4,894,229	573,774	11.7	162.27
Johnson	33,271,103	9,780,163	29.4	264.53
Knott	16,252,644	10,508,230	64.7	281.45
Knox	27,221,694	5,405,101	19.9	223.54
Laurel	68,191,789	4,738,143	6.9	230.10
Lawrence	11,365,936	1,424,798	12.5	197.12
Lee	5,378,342	2,295,208	42.7	187.03
Leslie	8,828,033	4,177,194	47.3	228.21
Letcher	62,764,131	45,178,677	72.0	319.18
McCreary	6,797,937	1,016,770	15.0	230.04
Magoffin	9,637,908	4,293,813	44.6	282.79
Martin	43,794,664	38,232,864	87.3	402.21
Menifee	1,539,642	NA	--	--
Morgan	11,307,566	3,053,821	27.0	250.97
Owsley	1,858,083	845,303	45.5	275.52
Perry	84,550,286	52,692,550	62.3	334.32
Pike	189,201,851	123,482,433	65.2	297.69
Pulaski	78,654,518	2,249,240	2.9	227.66
Rockcastle	4,051,019	220,437	5.4	157.01
Wayne	13,074,831	600,844	4.6	180.54
Whitley	55,297,654	12,528,708	22.7	276.62
Wolfe	4,198,859	848,458	20.2	183.33

*Bituminous Coal Mining Wage figure not reported separately.

Source: Kentucky Dept. for Human Resources, Bureau of Social Insurance, Division for Research and Special Projects, "Total Wages Covered by Kentucky Unemployment Insurance Law by Industrial Division and County, Calendar Year 1976."

WESTERN KENTUCKY

In 1976 western Kentucky had a total of 193 coal mines (30 underground and 182 surface) that produced 54.3 million tons (23.9 million underground and 30.4 million surface) and employed 11,474 workers (6,943 underground and 4,531 surface). Underground mining accounted for 16 percent of the mines, 44 percent of the tonnage, and 61 percent of the employees. Surface mining accounted for 84 percent of the mines, 56 percent of the tonnage, and 39 percent of the employees in 1976. Tables 3-13 and 3-14 detail and rank production by county for 1976.

In 1977 western Kentucky had a total of 215 coal mines (33 underground and 182 surface) that produced 51.7 million tons (22.8 million underground and 28.9 million surface) and employed 12,772 workers (7,709 underground and 5,063 surface). Underground mining accounted for 15 percent of the mines, 44 percent of the tonnage, and 60 percent of the employees. Surface mining accounted for 85 percent of the mines, 56 percent of the tonnage, and 40 percent of the employees in 1977. Tables 3-15 and 3-16 detail and rank production by county for 1977.

Western Kentucky had 13 coal producing counties in 1976 and 15 in 1977. In 1976, 6 counties produced over a million tons each, 4 of these producing over 5 million tons each, and one of these, Muhlenberg, produced over 20 million tons. In 1977, 6 counties produced over a million tons each, 4 of these producing over 5 million tons each, and 2 of these, Muhlenberg and Hopkins, produced over 10 million tons each. Over a thousand miners were employed in each of 4 counties in both 1976 and 1977.

Mining employment and payroll as a proportion of total county employment and payroll in western Kentucky are detailed for 1976 in Tables 3-17 and 3-18. In two of the leading coal producing counties, Muhlenberg and Union, mining employment is over 40 percent of all employment in the counties. In every case, mining's proportion of county payroll is higher than its proportion of county employment, suggesting that mining wages were above county average wages in all the mining counties. In three counties, mining supplied over 60 percent of the county payroll. The average weekly mining salary was highest in Muhlenberg County, $388.68.

As with the rest of the Eastern Interior province, or Illinois Basin, western Kentucky's coal is high in sulfur content. The district has a reliable customer committed to scrubbers in the Tennessee Valley Authority, which buys approximately half the coal production of western Kentucky. The district appears to be less vulnerable to competition for markets from low sulfur western or eastern coal than Illinois, Indiana or Ohio.

TABLE 3-13

WESTERN KENTUCKY COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Butler	1	54,021	14	29	874,321	272	30	928,342	286
Christian	--	--	--	5	219,595	56	5	219,595	56
Daviess	--	--	--	6	1,004,726	148	6	1,004,726	148
Edmonson	--	--	--	1	--	--	1	--	--
Grayson	--	--	--	3	11,311	10	3	11,311	10
Hancock	--	--	--	5	130,602	39	5	130,602	39
Henderson	2	972,513	154	--	--	--	2	972,513	154
Hopkins	8	5,294,839	1,465	41	4,480,366	672	49	9,775,205	2,137
McLean	--	--	--	5	751,381	130	5	751,381	130
Muhlenberg	7	4,947,484	1,455	13	16,226,907	2,017	20	21,174,391	3,472
Ohio	4	3,183,190	1,362	35	6,177,605	1,007	39	9,360,795	2,369
Union	7	7,632,321	2,278	--	--	--	7	7,632,321	2,278
Warren	--	--	--	2	14,260	18	2	14,620	18
Webster	1	1,803,988	215	18	502,717	162	19	2,306,705	377
Totals:	30	23,888,356	6,943	163	30,394,151	4,531	193	54,282,507	11,474

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1976.

TABLE 3- 14

WESTERN KENTUCKY COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1976

County	Production		Employees	
	Tonnage	% of KY (W) Total	Number	% of KY (W) Total
Muhlenberg	21,174,391	39.00	3,472	30.26
Hopkins	9,775,205	18.00	2,137	18.62
Ohio	9,360,795	17.24	2,369	20.65
Union	7,632,321	14.06	2,278	19.85
Webster	2,306,705	4.25	377	3.29
Daviess	1,004,726	1.85	148	1.29
Henderson	972,513	1.79	154	1.34
Butler	928,342	1.71	286	2.49
McLean	751,381	1.38	130	1.13
Christian	219,595	0.40	56	0.49
Hancock	130,602	0.24	39	0.34
Warren	14,620	0.03	18	0.16
Grayson	11,311	0.02	10	0.09
Edmonson	0	0.00	0	0.00
Totals:	54,282,507	99.97	11,474	100.00

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1976.

TABLE 3-15

WESTERN KENTUCKY COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Butler	1	21,490	14	36	996,591	332	37	1,018,081	346
Caldwell	--	--	--	3	76,668	17	3	76,668	17
Christian	--	--	--	5	244,414	54	5	244,414	54
Daviess	--	--	--	5	965,485	137	5	965,485	137
Edmonson	--	--	--	2	1,865	6	2	1,865	6
Grayson	--	--	--	2	63,500	25	2	63,500	25
Hancock	--	--	--	5	32,928	38	5	32,928	38
Henderson	1	573,622	117	--	--	--	1	573,622	117
Hopkins	8	5,110,333	1,568	41	5,208,693	718	49	10,319,026	2,286
McLean	--	--	--	3	669,834	114	3	669,834	114
Muhlenberg	8	4,929,309	1,666	15	12,424,036	1,997	23	17,353,345	3,663
Ohio	4	2,822,428	1,442	42	7,118,080	1,326	46	9,940,508	2,768
Union	7	6,928,408	2,428	--	--	--	7	6,926,408	2,428
Warren	--	--	--	1	15,850	8	1	15,850	8
Webster	4	2,408,124	474	22	1,063,344	291	26	3,471,468	765
Totals:	33	22,793,714	7,709	182	28,881,288	5,063	215	51,673,002	12,772

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1977.

TABLE 3-16

WESTERN KENTUCKY COAL PRODUCTION AND EMPLOYMENT
RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Muhlenberg	17,353,345	33.58	3,663	28.68
Hopkins	10,319,026	19.97	2,286	17.90
Ohio	9,940,508	19.24	2,768	21.67
Union	6,926,408	13.40	2,428	19.01
Webster	3,471,468	6.72	765	5.99
Butler	1,018,081	1.97	346	2.71
Daviess	965,485	1.87	137	1.07
McLean	669,834	1.30	114	0.89
Henderson	573,622	1.11	117	0.92
Christian	244,414	0.47	54	0.42
Caldwell	76,668	0.15	17	0.13
Grayson	63,500	0.12	25	0.19
Hancock	32,928	0.06	38	0.30
Warren	15,850	0.03	8	0.06
Edmonson	1,865	0.003	6	0.05
Totals:	51,673,002	99.99	12,772	99.99

Source: Kentucky Dept. of Mines and Minerals, Annual Report, 1977.

TABLE 3-17

WESTERN KENTUCKY COUNTY MINING AND QUARRYING EMPLOYMENT, 1976

County	Total County Employment	Mining & Quarrying Employment*	% of Total
Butler	4,018	179	11.7
Christian	12,981	117	0.9
Daviess	23,079	545	2.5
Edmonson	921	12	1.3
Grayson	3,041	37	1.2
Hancock	3,398	34	1.0
Henderson	11,146	475	4.3
Hopkins	14,089	2,547	18.1
McLean	1,254	113	9.0
Muhlenberg	7,435	3,575	48.1
Ohio	4,833	NA	--
Union	4,638	1,909	41.2
Warren	21,753	122	0.6
Webster	2,365	849	35.9

*Bituminous Coal Mining Employment figures not reported separately.

Source: Kentucky Dept. for Human Resources, Bureau of Social Insurance, Division for Research and Special Projects, "Average Monthly Workers Covered by Kentucky Unemployment Insurance Law by Industrial Division and County, Calendar Year 1976."

TABLE 3-18

WESTERN KENTUCKY COUNTY MINING AND QUARRYING PAYROLL AND AVERAGE WEEKLY SALARY, 1976

County	Total County Payroll	Mining & Quarrying Payroll		
		Amount*	% of Total	Average Weekly Salary
Butler	$ 10,114,545	$1,778,497	17.6	$191.07
Christian	100,113,289	NA	--	--
Daviess	210,416,355	6,911,218	3.2	243.87
Edmonson	5,442,266	98,158	1.8	157.30
Grayson	21,094,402	356,644	1.7	185.37
Hancock	49,978,830	NA	--	--
Henderson	104,270,871	6,647,022	6.3	269.11
Hopkins	145,135,774	47,192,711	32.5	356.32
McLean	11,187,392	1,742,598	15.6	296.56
Muhlenberg	100,602,697	72,256,453	71.8	388.68
Ohio	59,525,236	NA	--	--
Union	53,978,546	33,785,795	62.6	340.35
Warren	185,324,448	1,226,110	0.6	193.27
Webster	27,305,712	16,716,369	61.2	378.64

*Bituminous Coal Mining Wage figure not reported separately.

Source: Kentucky Dept. for Human Resources, Bureau of Social Insurance, Division for Research and Special Projects, "Total Wages Covered by Kentucky Unemployment Insurance Law by Industrial Division and County, Calendar Year 1976."

OHIO

Ohio in 1976 and 1977 ranked fifth in coal production both among the ORBES states and nationally. In 1978 Ohio was passed by Wyoming and dropped into sixth place nationally in terms of tonnage produced. In terms of coal employment, Ohio in 1976 ranked fourth both among the ORBES states and nationally.[5]

In 1976 Ohio had a total of 385 coal mines (32 underground and 353 surface) that produced 46.8 million tons (16.7 million underground and 30.1 million surface) and employed 11,758 workers (7,681 underground and 4,077 surface). Underground mining accounted for 8 percent of the mines, 36 percent of the tonnage, and 65 percent of the employees. Surface mining accounted for 92 percent of the mines, 64 percent of the tonnage, and 35 percent of the employees in 1976. Figure 3-4 is a map identifying Ohio coal producing counties in 1976. Tables 3-19 and 3-20 detail and rank production by county for 1976.

In 1977 Ohio had a total of 344 coal mines (30 underground and 314 surface) that produced 46.9 million tons (14.0 million underground and 32.9 million surface) and employed 12,167 workers (7,857 underground and 4,310 surface). Underground mining accounted for 9 percent of the mines, 30 percent of the tonnage, and 65 percent of the employees. Surface mining accounted for 91 percent of the mines, 70 percent of the tonnage, and 35 percent of the employees in 1976. Tables 3-21 and 3-22 detail and rank production by county for 1977.

Ohio had 26 coal producing counties in 1976 and 25 in 1977. In 1976, 11 counties produced over a million tons each, 3 of these producing over 5 million tons each, and one of these, Belmont, produced over 10 million tons. In 1977, 13 counties produced over a million tons each, again with three producing over 5 million tons each, and Belmont among these produced over 10 million tons. Over a thousand miners were employed in each of 3 counties in 1976 and 5 counties in 1977.

Mining employment and payroll as a proportion of total county employment and payroll are detailed for 1976 in Tables 3-23 and 3-24. These tables are based on unemployment compensation on data for all mining, and correspond only fairly well with the Ohio Department of Mines report. The tables show that mining employment is over 20 percent of all employment in 3 counties. In every case, mining's proportion of county payroll is equal to or higher than its proportion of county employment, suggesting that mining wages were above county average wages in all the mining counties. In 61 counties, mining provided over 20 percent of the county payroll, and in two counties over half. The average weekly mining salary was highest in Jackson County, $366.71.

Ohio coal is generally high in sulfur content, and future production will be substantially affected by air pollution regulations. Ohio is highly vulnerable to competition for markets from lower sulfur coal from neighboring Appalachian coal fields in Kentucky and West Virginia.

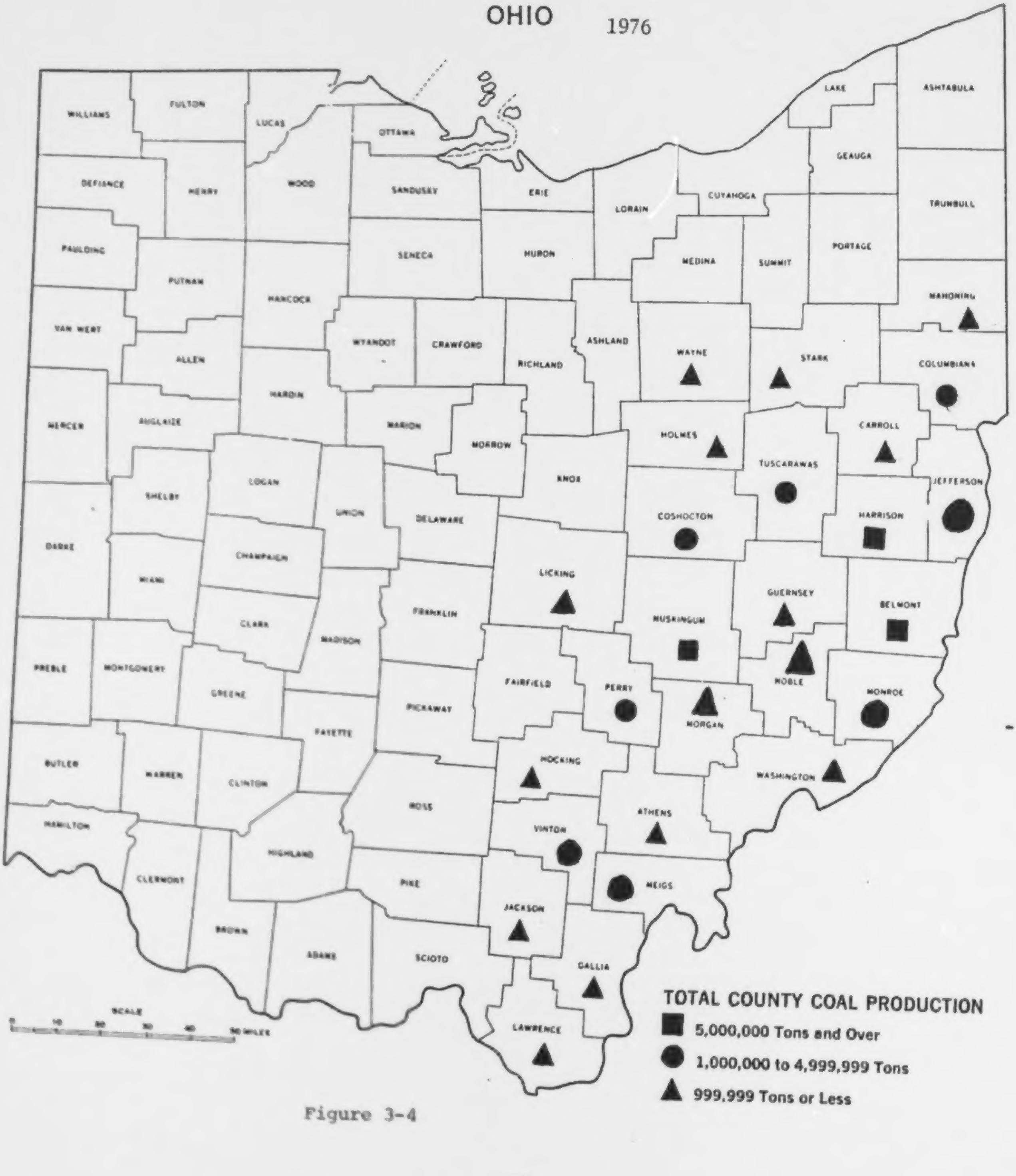

OHIO
1976
WILLIAMS
FULTON
LUCAS
OTTAWA
LAKE
ASHTABULA
DEFIANCE
HENRY
WOOD
SANDUSKY
ERIE
LORAIN
CUYAHOGA
GEAUGA
TRUMBULL
PAULDING
PUTNAM
HANCOCK
SENECA
HURON
MEDINA
SUMMIT
PORTAGE
VAN WERT
ALLEN
WYANDOT
CRAWFORD
RICHLAND
ASHLAND
WAYNE
STARK
MAHONING
COLUMBIANA
MERCER
AUGLAIZE
HARDIN
MARION
MORROW
HOLMES
CARROLL
TUSCARAWAS
SHELBY
LOGAN
UNION
DELAWARE
KNOX
COSHOCTON
HARRISON
JEFFERSON
DARKE
MIAMI
CHAMPAIGN
LICKING
GUERNSEY
BELMONT
CLARK
FRANKLIN
MADISON
MUSKINGUM
PREBLE
MONTGOMERY
GREENE
FAIRFIELD
PERRY
MORGAN
NOBLE
MONROE
PICKAWAY
FAYETTE
BUTLER
WARREN
CLINTON
HOCKING
WASHINGTON
HAMILTON
ROSS
ATHENS
VINTON
HIGHLAND
CLERMONT
PIKE
MEIGS
JACKSON
BROWN
ADAMS
SCIOTO
GALLIA
LAWRENCE
SCALE
0 10 20 30 40 50 MILES
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less

Figure 3-4

TABLE 3-19

OHIO COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees[a]
Athens	--	--	--	3	93,892	*	3	93,892	14
Belmont	7	6,912,178	2,897	71	6,416,106	*	78	13,328,284	3,743
Carroll	--	--	--	13	287,445	*	13	287,445	62
Columbiana	3	86,246	*	37	932,915	*	40	1,019,161	226
Coshocton	1	443,085	*	15	1,281,172	*	16	1,724,257	408
Gallia	--	--	--	4	401,593	97	4	401,593	65
Guernsey	1	6,151	*	11	700,272	*	12	706,423	80
Harrison	5	2,979,088	*	21	3,823,012	*	26	6,802,100	1,642
Hocking	--	--	--	9	840,468	*	9	840,468	116
Holmes	--	--	--	7	559,358	*	7	559,358	32
Jackson	3	102,976	*	19	838,225	*	22	941,201	139
Jefferson	2	407,226	*	39	3,272,029	*	41	3,679,255	655
Lawrence	--	--	--	5	198,892	*	5	198,892	57
Licking	--	--	--	1	606	2	1	606	1
Mahoning	--	--	--	8	266,637	*	8	266,637	53
Meigs	2	1,722,881	1,421	--	--	--	2	1,722,881	973
Monroe	2	1,475,351	1,386	--	--	--	2	1,475,351	1,101
Morgan	--	--	--	1	82,307	*	1	82,307	--
Muskingum	2	198,450	*	20	5,815,680	*	22	6,014,130	940
Noble	--	--	--	3	246,592	*	3	246,592	27
Perry	1	1,815,007	*	9	460,065	*	10	2,275,072	582
Stark	--	--	--	14	449,057	*	14	449,057	90
Tuscarawas	1	23,270	*	27	1,492,733	*	28	1,516,003	227
Vinton	2	544,654	*	14	1,515,582	*	16	2,060,236	508
Washington	--	--	--	1	84,269	21	1	84,269	17
Wayne	--	--	--	1	37,430	*	1	37,430	--
Totals:	32	16,716,563	*	353	30,096,337	*	385	46,812,900	11,757

*Employment not fully reported.

[a] Monthly average

Source: Ohio Division of Mines, Report, 1976. (This report does not list underground and surface employment separately by counties; average monthly employment by county is given in Table 11, p. 12.)

TABLE 3-20

OHIO COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1976

County	Production		Employees	
	Tonnage	% of Total	Monthly Average	% of Total
Belmont	13,328,284	28.47	3,743	31.83
Harrison	6,802,100	14.53	1,642	13.96
Muskingum	6,014,130	12.85	940	7.99
Jefferson	3,679,255	7.86	655	5.57
Perry	2,275,072	4.86	582	4.95
Vinton	2,060,236	4.40	508	4.32
Coshocton	1,724,257	3.68	408	3.47
Meigs	1,722,881	3.68	973	8.28
Tuscarawas	1,516,003	3.24	227	1.93
Monroe	1,475,351	3.15	1,101	9.36
Columbiana	1,019,161	2.18	226	1.92
Jackson	941,201	2.01	139	1.18
Hocking	840,468	1.80	116	0.99
Guernsey	706,423	1.51	80	0.68
Holmes	559,358	1.19	32	0.27
Stark	449,057	0.96	90	0.77
Gallia	401,593	0.86	65	0.55
Carroll	287,445	0.61	62	0.53
Mahoning	266,637	0.57	53	0.45
Noble	246,592	0.53	27	0.23
Lawrence	198,892	0.42	57	0.48
Athens	93,892	0.20	14	0.12
Washington	84,269	0.18	17	0.14
Morgan	82,307	0.17	NA	--
Wayne	37,430	0.08	NA	--
Licking	606	0.001	1	0.008
Totals:	46,812,900	99.99	11,758	99.97

Source: Ohio Department of Mines, Annual Report, 1976.

TABLE 3-21

OHIO COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees[a]
Athens	--	--	--	2	96,636	*	2	96,636	12
Belmont	7	4,870,082	*	1	7,073,584	*	8	11,943,666	3,057
Carroll	1	1,724	*	12	308,646	*	13	310,370	85
Columbiana	3	92,745	*	32	1,080,485	*	35	1,173,230	258
Coshocton	1	340,577	*	20	1,489,352	*	21	1,829,929	428
Gallia	--	--	--	6	431,599	*	6	431,599	77
Guernsey	--	--	--	20	963,749	*	20	963,749	94
Harrison	6	2,931,465	*	26	3,057,568	*	32	5,989,033	1,983
Hocking	--	--	--	15	1,153,399	*	15	1,153,399	134
Holmes	--	--	--	7	680,887	*	7	680,887	44
Jackson	1	3,358	*	22	1,041,768	*	23	1,045,126	129
Jefferson	1	367,749	*	37	3,684,964	*	38	4,052,713	661
Lawrence	--	--	--	3	242,181	*	3	242,181	48
Mahoning	--	--	--	9	296,581	*	9	296,581	62
Meigs	2	1,637,367	*	--	--	--	2	1,637,367	1,004
Monroe	2	1,387,303	*	--	--	--	2	1,387,303	1,379
Morgan	--	--	--	1	264,494	*	1	264,494	--
Muskingum	1	119,622	*	26	5,667,538	*	27	5,787,170	1,167
Noble	--	--	--	4	357,313	*	4	357,313	33
Perry	1	1,588,991	*	10	715,037	*	11	2,304,028	633
Stark	--	--	--	15	702,562	*	15	702,562	110
Tuscarawas	2	21,226	*	28	1,710,842	*	30	1,732,068	247
Vinton	2	641,948	*	17	1,684,341	*	19	2,326,289	633
Washington	--	--	--	1	198,516	*	1	198,516	28
Wayne	--	--	--	1	33,922	*	1	33,922	--
Totals:	30	14,004,157	7,857	314	32,935,974	4,310	344	46,940,131	12,306

*Employment not fully reported.

[a] Monthly average

Source: Ohio Division of Mines, Report, 1977. (This report does not list underground and surface employment seperately by counties; average monthly employment by county is given in Table 11, p. 12.)

TABLE 3-22

OHIO COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Monthly Average	% of Total
Belmont	11,943,666	25.44	3,057	25.13
Harrison	5,989,033	12.76	1,983	16.30
Muskingum	5,787,170	12.33	1,167	9.59
Jefferson	4,052,713	8.63	661	5.43
Vinton	2,326,289	4.96	633	5.20
Perry	2,304,028	4.91	633	5.20
Coshocton	1,829,929	3.90	428	3.51
Tuscarawas	1,732,068	3.69	247	2.03
Meigs	1,637,367	3.49	1,004	8.25
Monroe	1,387,303	2.95	1,379	11.33
Columbiana	1,173,230	2.50	258	2.12
Hocking	1,153,399	2.46	134	1.10
Jackson	1,045,126	2.23	129	1.06
Guernsey	963,749	2.05	94	0.77
Stark	702,562	1.50	110	0.90
Holmes	680,887	1.45	44	0.36
Gallia	431,599	0.92	77	0.63
Noble	357,313	0.76	33	0.27
Carroll	310,370	0.66	85	0.70
Mahoning	296,581	0.63	62	0.51
Morgan	264,494	0.56	NA	--
Lawrence	242,181	0.52	48	0.39
Washington	198,516	0.42	28	0.23
Athens	96,636	0.20	12	0.10
Wayne	33,922	0.07	NA	--
Totals:	46,940,131	99.99	12,167	95.39

Source: Ohio Department of Mines, Annual Report, 1977.

TABLE 3- 23

OHIO COUNTY MINING EMPLOYMENT, 1976

County	Total County Employment	Mining Employment*	% of Total
Athens	11,694	53	0.5
Belmont	19,782	4,036	20.4
Carroll	3,489	142	4.1
Columbiana	27,058	314	1.2
Coshocton	11,684	801	6.9
Gallia	7,550	75	1.0
Guernsey	13,206	394	3.0
Harrison	6,963	3,679	52.8
Hocking	5,749	204	3.5
Holmes	5,692	330	5.8
Jackson	6,583	239	3.6
Jefferson	29,527	1,528	5.2
Lawrence	10,273	149	1.5
Licking	30,561	384	1.3
Mahoning	101,058	200	0.2
Meigs	4,760	1,907	40.1
Monroe	5,324	1,391	26.1
Morgan	3,328	654	19.7
Muskingum	25,474	852	3.3
Noble	2,136	170	8.0
Perry	4,652	836	18.0
Stark	132,250	634	0.5
Tuscarawas	23,760	562	2.4
Vinton	1,816	175	9.6
Washington	17,020	161	0.9
Wayne	30,258	433	1.4

*Bituminous Coal Mining Employment figures not reported on a county basis.

Source: Ohio Bureau of Employment Services, "Average Number of Workers Covered Under Ohio Unemployment Compensation Law by Industrial Division and County," and "Workers Covered Under Ohio Unemployment Compensation Law by Industrial Group," 1976.

TABLE 3-24

OHIO COUNTY MINING PAYROLL AND AVERAGE WEEKLY SALARY, 1976

County	Total County Payroll	Mining Payroll*	% of Total	Average Weekly Salary
Athens	$109,080,547	$ 632,893	0.6	$229.61
Belmont	203,873,614	63,325,674	31.1	301.73
Carroll	30,393,412	1,987,898	6.5	269.21
Columbiana	252,643,289	4,363,084	1.7	267.21
Coshocton	129,894,140	13,903,904	10.7	333.81
Gallia	67,859,596	915,802	1.3	234.82
Guernsey	121,353,372	5,351,756	4.4	261.21
Harrison	81,271,554	57,144,057	70.3	298.70
Hocking	50,511,128	2,481,055	4.9	233.89
Holmes	49,335,559	5,333,808	10.8	310.83
Jackson	57,205,684	4,557,462	8.0	366.71
Jefferson	357,309,674	24,580,359	6.8	309.36
Lawrence	102,917,117	1,762,812	1.7	227.52
Licking	308,575,347	4,138,617	1.3	207.26
Mahoning	1,109,270,694	3,052,769	0.3	293.54
Meigs	53,452,022	28,442,007	53.2	286.82
Monroe	74,906,346	19,520,919	26.1	269.88
Morgan	37,990,898	12,881,992	33.9	378.79
Muskingum	236,064,894	12,189,311	5.1	275.13
Noble	18,755,877	2,560,530	13.7	289.65
Perry	45,195,333	13,362,490	29.6	307.38
Stark	1,458,146,826	8,567,205	0.6	259.86
Tuscarawas	229,536,040	7,444,386	3.2	254.74
Vinton	15,272,201	1,884,578	12.3	207.10
Washington	169,692,318	1,238,212	0.7	147.90
Wayne	305,176,289	6,545,640	2.1	290.71

*Bituminous Coal Mining figures not reported on a county basis.

Source: Ohio Bureau of Employment Services, "Total Payroll Under Ohio Unemployment Compensation Law by Industrial Division and County," and "Payrolls and Contributions Under Ohio Unemployment Compensation Law by Industrial Group," 1976.

PENNSYLVANIA

Pennsylvania in 1976 and 1977 ranked third in bituminous coal production both among the ORBES states and nationally. It will be passed by Wyoming in 1979 or 1980, but may catch up with West Virginia. In terms of bituminous coal employment, Pennsylvania in 1976 ranked third both among the ORBES states and nationally.[6]

In 1976 Pennsylvania had a total of 1,721 bituminous coal mines (151 underground and 1,570 surface) that produced 85.7 million tons (44.3 million underground and 41.4 million surface) and employed 33,578 workers (24,079 underground and 9,499 surface). Underground mining accounted for 9 percent of the mines, 52 percent of the tonnage, and 72 percent of the employees. Surface mining accounted for 91 percent of the mines, 48 percent of the tonnage, and 28 percent of the employees in 1976. Figure 3-5 is a map identifying Pennsylvania coal producing counties in 1976. Tables 3-25 and 3-26 detail and rank production by county for 1976.

In 1977 Pennsylvania had a total of 1,980 bituminous coal mines (157 underground and 1,823 surface) that produced 86.4 million tons (38.8 million underground and 47.7 million surface) and employed 35,197 workers (24,779 underground and 10,418 surface). Underground mining accounted for 8 percent of the mines, 45 percent of the tonnage, and 70 percent of the employees. Surface mining accounted for 92 percent of the mines, 55 percent of the production, and 30 percent of the employees in 1977. Tables 3-27 and 3-28 detail and rank production by county for 1977.

Pennsylvania had 27 bituminous coal producing counties in 1976 and 26 in 1977. Of these counties, 18 are within the ORBES region. In 1976 and 1977, 14 counties produced over a million tons of bituminous coal each, 8 of these produced over 5 million tons each, and two of these, Washington and Indiana, produced over 10 million tons each. Only one county producing over a million tons, Centre, is outside the ORBES region. Over a thousand miners were employed in each of 10 counties in 1976 and 1977, all of which were counties in the ORBES region.

Pennsylvania also has 9 counties presently producing anthracite coal, all outside the ORBES region. Production, which has been steadily declining from a peak of 100 million tons in 1917, was about 5 million tons in 1977, when 3,603 miners were employed.

Mining employment and payroll as a proportion of total county employment and payroll are detailed for 1976 in Tables 3-29 and 3-30. These tables are based on unemployment compensation data, and correspond only fairly well with the state report on mining. The tables show that mining employment is over 10 percent of all employment in 7 counties, and over 45 percent in Greene County. In every case, mining's proportion of county payroll is higher than its proportion of county employment, suggesting that mining wages were above average wages in all the mining counties. In 5 counties, mining provided over 20 percent of the county payroll, in Greene County over 60 percent. The average weekly mining salary was highest in Clarion County, $348.54.

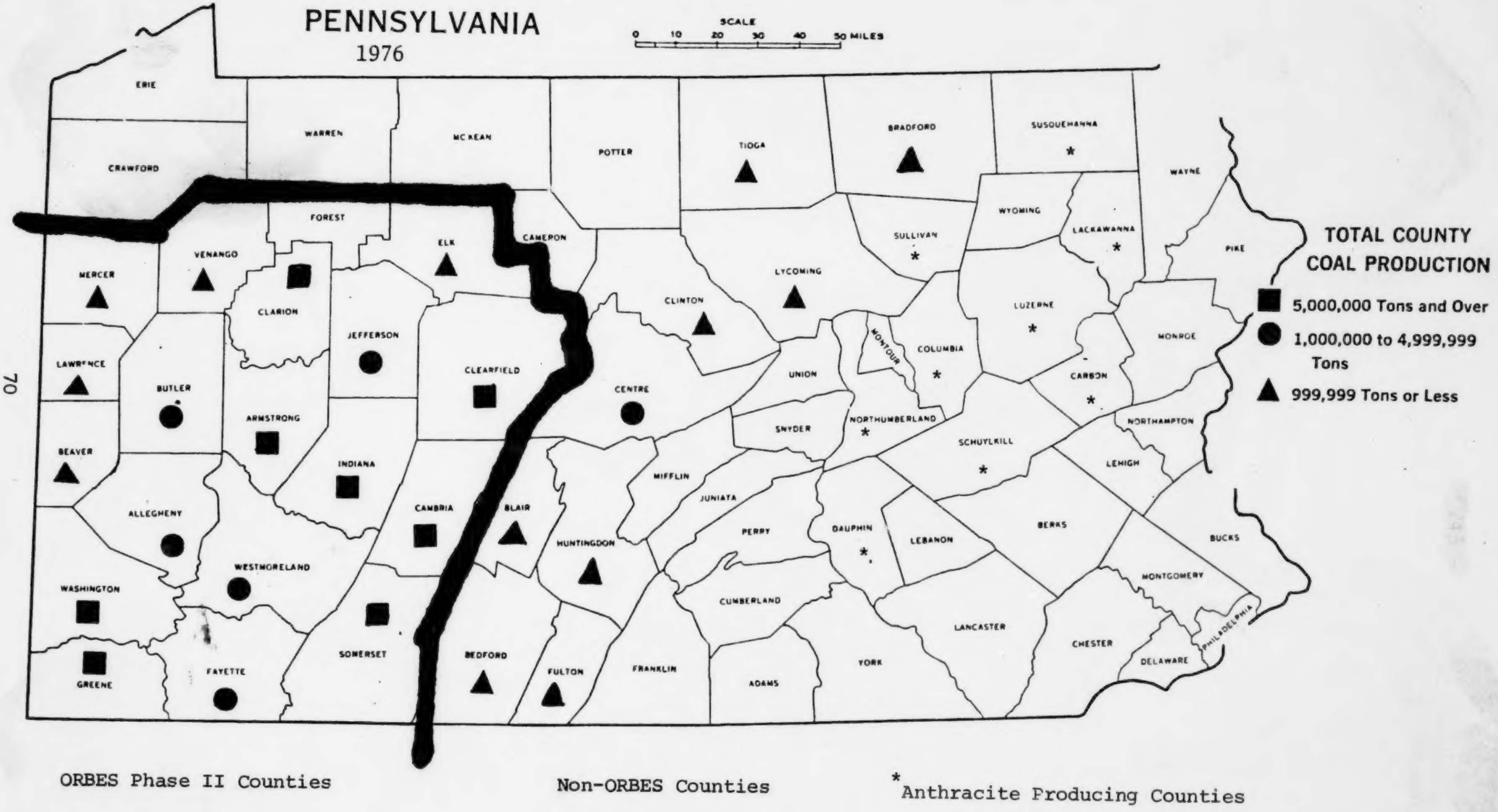

PENNSYLVANIA
1976
SCALE
0 10 20 30 40 50 MILES
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less
ERIE
CRAWFORD
WARREN
MC KEAN
POTTER
TIOGA
BRADFORD
SUSQUEHANNA
WAYNE
PIKE
FOREST
ELK
CAMERON
MERCER
VENANGO
CLARION
JEFFERSON
CLEARFIELD
CLINTON
LYCOMING
SULLIVAN
WYOMING
LACKAWANNA
LUZERNE
MONROE
LAWRENCE
BUTLER
ARMSTRONG
CENTRE
UNION
MONTOUR
COLUMBIA
CARBON
NORTHAMPTON
BEAVER
INDIANA
SNYDER
NORTHUMBERLAND
SCHUYLKILL
LEHIGH
ALLEGHENY
CAMBRIA
BLAIR
MIFFLIN
JUNIATA
PERRY
DAUPHIN
LEBANON
BERKS
BUCKS
WESTMORELAND
HUNTINGDON
CUMBERLAND
MONTGOMERY
WASHINGTON
SOMERSET
BEDFORD
FULTON
FRANKLIN
ADAMS
YORK
LANCASTER
CHESTER
DELAWARE
PHILADELPHIA
GREENE
FAYETTE
ORBES Phase II Counties
Non-ORBES Counties
*Anthracite Producing Counties

Figure 3-5

TABLE 3- 25

PENNSYLVANIA BITUMINOUS COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Allegheny	9	3,321,317	1,594	29	603,234	159	38	3,924,551	1,753
Armstrong	13	4,246,880	1,484	132	3,480,521	613	145	7,727,401	2,097
Beaver	1	82,315	121	4	105,787	29	5	188,102	150
Bedford*	--	--	--	7	104,256	69	7	104,256	69
Blair*	--	--	--	1	1,088	3	1	1,088	3
Bradford*	1	50	1	--	--	--	1	50	1
Butler	1	250,657	218	49	1,075,072	258	50	1,325,729	476
Cambria	21	5,027,225	4,211	59	2,857,108	750	80	7,884,333	4,961
Centre*	1	602,864	231	19	612,077	154	20	1,214,941	385
Clarion	--	--	--	143	5,197,011	1,068	143	5,197,011	1,068
Clearfield	4	651,446	225	264	7,659,290	1,851	268	8,310,736	2,076
Clinton*	--	--	--	17	390,768	127	17	390,768	127
Elk	--	--	--	36	674,260	116	36	674,260	116
Fayette	2	753,389	472	128	2,373,386	561	130	3,126,775	1,033
Fulton*	--	--	--	2	12,500	4	2	12,500	4
Greene	16	6,892,325	3,888	47	1,092,546	234	63	7,984,871	4,122
Huntington*	--	--	--	2	4,000	4	2	4,000	4
Indiana	33	8,138,008	4,639	133	2,664,391	608	166	10,802,399	5,247
Jefferson	5	81,088	50	95	2,406,714	516	100	2,487,802	566
Lawrence	--	--	--	29	689,526	146	29	689,526	146
Lycoming*	--	--	--	6	490,197	71	6	490,197	71
Mercer	--	--	--	7	399,737	46	7	399,737	46
Somerset	25	2,681,453	1,399	182	3,705,080	1,021	207	6,386,533	2,420
Tioga*	--	--	--	7	629,653	103	7	629,653	103
Venango	--	--	--	19	540,568	93	19	540,568	93
Washington	13	10,799,522	5,141	48	1,646,302	362	61	12,445,824	5,503
Westmoreland	6	800,041	405	105	2,004,222	533	111	2,804,263	938
Totals	151	44,328,580	24,079	1,570	41,419,294	9,499	1,721	85,747,874	33,578

*Non-ORBES county.

Source: Pennsylvania Dept. of Environmental Resources, Annual Report on Mining, Oil and Gas, 1976.

TABLE 3- 26

PENNSYLVANIA BITUMINOUS COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1976

	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Washington	12,445,824	14.51	5,503	16.39
Indiana	10,802,399	12.60	5,247	15.63
Clearfield	8,310,736	9.70	2,076	6.18
Greene	7,984,871	9.31	4,122	12.28
Cambria	7,884,333	9.19	4,961	14.77
Armstrong	7,727,401	9.01	2,097	6.25
Somerset	6,386,533	7.45	2,420	7.21
Clarion	5,197,011	6.06	1,068	3.18
Allegheny	3,924,551	4.58	1,753	5.22
Fayette	3,126,775	3.65	1,033	3.08
Westmoreland	2,804,263	3.27	938	2.79
Jefferson	2,487,802	2.90	566	1.69
Butler	1,325,729	1.54	476	1.42
Centre*	1,214,941	1.42	385	1.15
Lawrence	689,526	0.80	146	0.43
Elk	674,260	0.79	116	0.35
Tioga*	629,653	0.73	103	0.31
Venango	540,568	0.63	93	0.28
Lycoming*	490,197	0.57	71	0.21
Mercer	399,737	0.47	46	0.14
Clinton*	390,768	0.45	127	0.38
Beaver	188,102	0.22	150	0.45
Bedford*	104,256	0.12	69	0.21
Fulton*	12,500	0.01	4	0.01
Huntington*	4,000	0.004	4	0.01
Blair*	1,088	0.001	3	0.00
Bradford*	50	0.00	1	0.00
Totals:	85,747,874	99.99	33,578	100.02

*Non-ORBES County

Source: Pennsylvania Dept. of Environmental Resources, Annual Report on Mining, Oil and Gas, 1976.

TABLE 3-27

PENNSYLVANIA BITUMINOUS COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Allegheny	9	3,112,591	1,639	39	508,549	154	48	3,621,140	1,793
Armstrong	14	3,508,567	1,500	157	3,995,642	767	171	7,504,209	2,267
Beaver	1	--	7	11	201,208	49	12	201,208	56
Bedford*	--	--	--	7	162,933	50	7	162,933	50
Blair*	--	--	--	3	31,135	14	3	31,135	14
Bradford*	--	--	--	--	--	--	--	--	--
Butler	2	201,031	204	54	1,385,548	338	56	1,586,579	542
Cambria	21	3,558,463	4,379	72	3,203,104	625	93	6,761,567	5,004
Centre*	1	483,167	198	21	785,033	172	22	1,268,200	370
Clarion	--	--	--	160	5,784,648	1,116	160	5,784,648	1,116
Clearfield	4	602,715	238	293	8,697,026	2,018	297	9,299,741	2,256
Clinton*	--	--	--	18	538,909	136	18	538,909	136
Elk	--	--	--	36	783,956	129	36	783,956	129
Fayette	2	644,422	485	151	2,551,236	660	153	3,195,658	1,145
Fulton*	--	--	--	2	14,200	4	2	14,200	4
Greene	25	6,248,656	4,167	40	834,928	190	65	7,083,584	4,357
Huntington	--	--	--	2	4,200	9	2	4,200	9
Indiana	32	7,767,995	4,720	134	2,767,251	629	166	10,535,246	5,349
Jefferson	3	31,296	33	134	3,190,180	647	137	3,221,476	680
Lawrence	--	--	--	26	783,610	125	26	783,610	125
Lycoming*	--	--	--	5	480,573	59	5	480,573	59
Mercer	--	--	--	9	345,249	41	9	345,249	41
Somerset	22	2,584,663	1,547	216	4,501,318	1,198	238	7,085,981	2,745
Tioga*	--	--	--	9	681,209	135	9	681,209	135
Venango	--	--	--	22	869,850	130	22	869,850	130
Washington	17	9,261,209	5,253	71	1,932,911	466	88	11,194,120	5,719
Westmoreland	6	755,773	409	129	2,626,922	557	135	3,382,695	916
Totals:	159	38,760,548	24,779	1,821	47,661,328	10,418	1,980	86,421,876	35,197

*Non-ORBES county.

Source: Pennsylvania Dept. of Environmental Resources, Annual Report on Mining, Oil and Gas, 1977.

TABLE 3-28

PENNSYLVANIA BITUMINOUS COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Washington	11,194,120	12.95	5,719	16.25
Indiana	10,535,246	12.19	5,349	15.20
Clearfield	9,299,741	10.76	2,256	6.40
Armstrong	7,504,209	8.68	2,267	6.44
Somerset	7,085,981	8.19	2,745	7.80
Greene	7,083,584	8.19	4,357	12.38
Cambria	6,761,567	7.82	5,004	14.22
Clarion	5,784,648	6.69	1,116	3.17
Allegheny	3,621,140	4.19	1,793	5.09
Westmoreland	3,382,695	3.91	966	2.74
Jefferson	3,221,476	3.73	680	1.93
Fayette	3,195,658	3.70	1,145	3.25
Butler	1,586,579	1.84	542	1.54
Centre*	1,268,200	1.46	370	1.05
Lawrence	873,610	1.01	125	0.36
Venango	869,850	1.01	130	0.37
Elk	783,956	0.90	129	0.36
Tioga*	681,209	0.79	135	0.38
Clinton*	538,909	0.62	136	0.39
Lycoming*	480,573	0.55	59	0.16
Mercer	345,249	0.40	41	0.12
Beaver	201,208	0.23	56	0.16
Bedford*	162,933	0.18	50	0.14
Blair*	31,135	0.04	14	0.04
Fulton*	14,200	0.02	4	0.01
Huntington*	4,200	0.004	9	0.03
Totals:	86,421,876	100.05	35,197	99.98

*Non-ORBES County

Source: Pennsylvania Dept. of Environmental Resources, Annual Report on Mining, Oil and Gas, 1977.

TABLE 3-29

PENNSYLVANIA COUNTY MINING EMPLOYMENT, 1976

County	Total County Employment	Mining Employment	% of Total
Allegheny	530,901	2,837[c]	0.5
Armstrong	14,684	1,886[c]	12.8
Beaver	65,105	228[b]	0.4
Bedford	7,751	NA[a]	--
Blair	37,909	NA[a]	--
Bradford	12,582	NA[a]	--
Butler	31,426	502[c]	1.6
Cambria	56,757	6,442[b]	11.4
Centre	33,660	586[b]	1.7
Clarion	9,695	1,179[c]	12.2
Clearfield	20,514	1,747[c]	8.5
Clinton	10,167	NA[a]	--
Elk	11,779	NA[a]	--
Fayette	26,193	1,285[c]	4.9
Fulton	1,491	NA[a]	--
Greene	8,226	3,728[b]	45.3
Huntington	9,151	176[b]	1.9
Indiana	22,183	3,886[c]	17.5
Jefferson	12,183	692[b]	5.7
Lawrence	24,469	256[b]	1.0
Lycoming	28,383	152[b]	0.4
Mercer	37,301	116[b]	0.3
Somerset	15,466	2,187[b]	14.1
Tioga	7,471	224[b]	3.0
Venango	19,741	NA[a]	--
Washington	55,149	6,407[b]	11.6
Westmoreland	92,360	1,283[c]	1.4

[a] Pennsylvania does not report employment and salary figures where employment is: (1) less than 100; (2) less than two percent of county total; (3) might be identified with an individual employer.

[b] Figure reported represents all mining in county.

[c] Figure reported represents bituminous coal mining only.

Source: Commonwealth of Pennsylvania, Dept. of Labor and Industry, Bureau of Employment Security, Statistical Information Bulletin No. 224, Employment and Wages of Workers Covered by the Pennsylvania Unemployment Compensation Law by County and by Industry, First Quarter 1976.

TABLE 3-30

PENNSYLVANIA COUNTY MINING PAYROLL AND AVERAGE WEEKLY SALARY FOR FIRST QUARTER, 1976

County	Total County Payroll	Coal Mining Payroll	% of Total	Mining Average Weekly Salary
	(In thousands)			
Allegheny	$1,541,277	$11,790,936[c]	0.8	$319.70
Armstrong	35,887	7,632,428[c]	21.3	311.30
Beaver	210,154	775,154[b]	0.4	261.52
Bedford	14,697	NA[a]	--	--
Blair	77,087	NA[a]	--	--
Bradford	28,450	NA[a]	--	--
Butler	84,352	2,157,752[c]	2.6	330.64
Cambria	149,728	25,820,182[b]	17.5	309.27
Centre	75,562	2,112,680[b]	2.8	277.33
Clarion	25,544	5,342,033[c]	20.9	348.54
Clearfirld	44,751	6,652,782[c]	14.9	292.93
Clinton	26,712	NA[a]	--	--
Elk	27,532	NA[a]	--	--
Fayette	58,462	5,689,076[c]	9.7	340.56
Fulton	2,985	NA[a]	--	--
Greene	24,215	15,193,113[b]	62.7	313.49
Huntington	18,355	477,965[b]	2.6	208.90
Indiana	58,748	15,431,053[c]	26.3	305.46
Jefferson	26,785	2,399,065[b]	9.0	266.68
Lawrence	56,047	922,160[b]	1.6	277.09
Lycoming	86,411	418,590[b]	0.5	211.84
Mercer	94,578	345,005[b]	0.4	228.78
Somerset	33,417	8,424,211[b]	25.2	296.30
Tioga	16,558	825,724[b]	5.0	283.56
Venango	51,132	NA[a]	--	--
Washington	147,773	26,398,569[b]	17.8	316.94
Westmoreland	231,973	5,074,902[c]	2.2	304.27

[a] Pennsylvania does not report employment and salary figures where employment is: (1) less than 100; (2) less than two percent of county total; (3) might be identified with an individual employer.

[b] Figure reported represents all mining in county.

[c] Figure reported represents bituminous coal mining only.

Source: Commonwealth of Pennsylvania, Dept. of Labor and Industry, Bureau of Employment Security, Statistical Information Bulletin No. 224, Employment and Wages of Workers Covered by the Pennsylvania Unemployment Compensation Law by County and by Industry, First Quarter 1976.

WEST VIRGINIA

West Virginia in 1976 and 1977 ranked second in coal production both among the ORBES states and nationally. It will be passed by Wyoming by 1980. In terms of coal employment, West Virginia ranked first in 1976 and 1977 both among the ORBES states and nationally.[7]

In 1976 West Virginia had a total of 1,407 coal mines (831 underground and 504 surface) that produced 108.8 million tons (87.8 million underground and 21.0 million surface) and employed 59,802 workers (51,771 underground and 8,031 surface). Underground mining accounted for 64 percent of the mines, 81 percent of the tonnage, and 87 percent of the employees. Surface mining accounted for 36 percent of the mines, 19 percent of the tonnage, and 13 percent of the employees in 1976. Figure 3-6 is a map identifying West Virginia coal producing counties in 1976. Tables 3-31 and 3-32 detail and rank production by county for 1976.

In 1977 West Virginia had a total of 1,340 coal mines (831 underground and 509 surface) that produced 95.4 million tons (74.0 million underground and 21.4 million surface) and employed 61,815 workers (52,532 underground and 9,283 surface). Underground mining accounted for 62 percent of the mines, 78 percent of the tonnage, and 85 percent of the employees. Surface mining accounted for 38 percent of the mines, 22 percent of the tonnage, and 15 percent of the employees in 1977. Tables 3-33 and 3-34 detail and rank production by county for 1977.

West Virginia had 35 coal producing counties in 1976 and 33 in 1977. In 1976, 20 counties produced over a million tons each, 11 of these producing over 5 million tons each, and three of these, Monongalia, Boone and McDowell, produced over 10 million tons each. In 1977, 19 counties produced over a million tons each, 9 of these producing over 5 million tons each, with Monongalia alone producing over 10 million tons. Over a thousand miners were employed in each of 14 counties in 1976 and 1977.

Mining employment and payroll as a proportion of total county employment and payroll are detailed for 1976 in Tables 3-35 and 3-36. The tables show that mining employment is over 20 percent of all employment in 12 counties, and over 40 percent in 6 of these. Mining employment is some 70 percent of total employment in Boone, McDowell, and Wyoming Counties in the southern part of the state. Mining's proportion of county payroll is higher than its proportion of county employment for all counties with significant coal production. In 18 counties mining provided over 20 percent of the county's payroll, and over 50 percent in 9 of these counties. The average weekly mining salary was highest in Raleigh County, $337.38.

West Virginia's southern coalfields have lower sulfur coal than its northern coalfields. Much of the coal in its southern fields is premium grade coking coal, and the region is highly vulnerable to shifts in demand from the domestic steel industry as well as conditions in the export market for metallurgical coal for the European and Japanese steel industries.

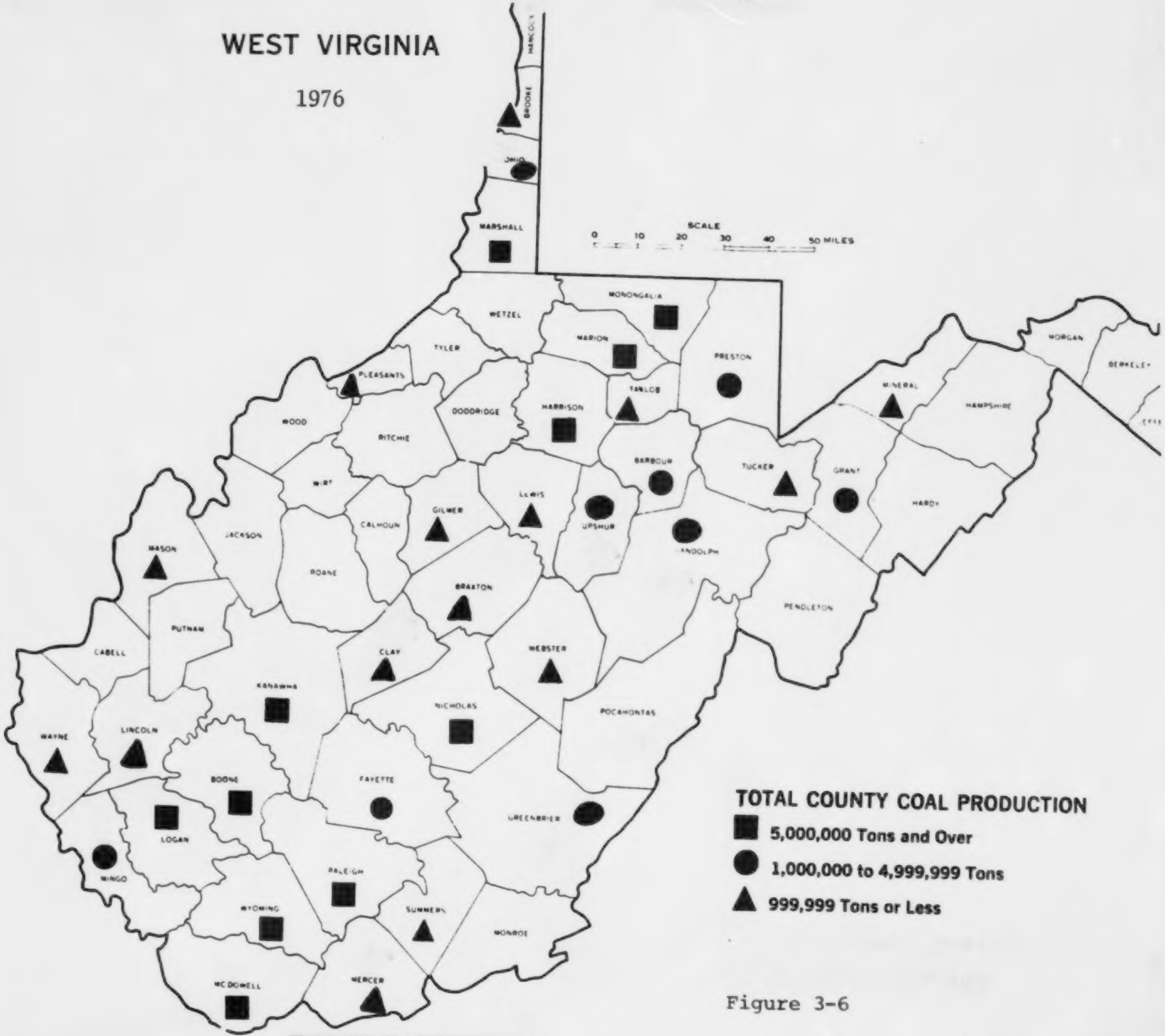

WEST VIRGINIA
1976
SCALE
0 10 20 30 40 50 MILES
HANCOCK
BROOKE
OHIO
MARSHALL
WETZEL
MONONGALIA
MARION
PRESTON
TYLER
PLEASANTS
DODDRIDGE
HARRISON
TAYLOR
WOOD
RITCHIE
BARBOUR
TUCKER
GRANT
MINERAL
HAMPSHIRE
MORGAN
BERKELEY
HARDY
WIRT
CALHOUN
GILMER
LEWIS
UPSHUR
ANDOLPH
JACKSON
ROANE
MASON
BRAXTON
PENDLETON
PUTNAM
CABELL
CLAY
WEBSTER
KANAWHA
NICHOLAS
POCAHONTAS
WAYNE
LINCOLN
BOONE
FAYETTE
GREENBRIER
LOGAN
MINGO
RALEIGH
WYOMING
SUMMERS
MONROE
MC DOWELL
MERCER
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less

Figure 3-6

Reproduced from best available copy.

TABLE 3-31

WEST VIRGINIA COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Barbour	12	950,046	696	38	2,047,244	737	50	2,997,290	1,433
Boone	56	8,263,056	5,053	24	2,204,986	676	80	10,468,042	5,729
Braxton	4	29,132	27	7	148,303	87	11	177,435	114
Brooke	2	748,228	344	5	126,938	31	7	875,166	375
Clay	6	40,497	29	2	22,234	5	8	62,731	34
Fayette	40	2,259,810	1,649	30	927,114	502	70	3,186,924	2,151
Gilmer	3	28,289	26	1	16,381	12	4	44,670	38
Grant	4	1,299,251	780	9	301,636	62	13	1,600,887	842
Greenbrier	15	504,707	241	23	524,730	490	38	1,029,437	731
Harrison	26	3,950,524	1,105	42	1,210,939	561	68	5,161,463	1,666
Kanawha	51	5,412,582	3,378	36	2,272,320	554	87	7,684,902	3,932
Lewis	2	41,493	8	17	340,759	158	19	382,252	166
Lincoln	3	172,414	91	--	--	--	3	172,414	91
Logan	100	7,113,887	4,567	12	1,498,266	475	112	8,612,153	5,042
McDowell	154	9,516,678	6,979	20	946,466	346	174	10,463,144	7,325
Marion	9	5,615,695	2,846	5	86,156	21	14	5,701,851	2,867
Marshall	4	5,131,175	2,362	--	--	--	4	5,131,175	2,362
Mason	2	45,550	49	--	--	--	2	45,550	49
Mercer	8	784,804	567	4	20,717	16	12	805,521	583
Mineral	--	--	--	16	358,638	99	16	358,638	99
Mingo	64	3,796,526	1,916	12	638,147	379	76	4,434,673	2,295
Monongalia	25	9,649,969	3,221	14	925,283	195	39	10,575,252	3,416
Nicholas	57	3,964,981	2,572	32	1,265,688	441	89	5,230,669	3,013
Ohio	2	1,501,590	939	--	--	--	2	1,501,590	939
Pleasants	1	778	1	--	--	--	1	778	1
Preston	16	971,007	309	50	1,508,943	440	66	2,479,950	749

(Continued)

Table 3-31 Continued

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Raleigh	59	5,730,110	4,662	27	1,097,708	633	86	6,827,818	5,295
Randolph	25	404,388	297	12	672,705	217	37	1,077,093	514
Summers	2	3,531	5	--	--	--	2	3,531	5
Taylor	--	--	--	8	227,227	93	8	227,227	93
Tucker	--	--	--	10	364,706	56	10	364,706	56
Upshur	7	949,022	341	21	453,697	321	28	1,402,719	662
Wayne	2	494,250	189	--	--	--	2	494,250	189
Webster	23	213,145	120	12	303,149	176	35	516,294	296
Wyoming	119	8,224,163	6,402	15	471,236	248	134	8,695,399	6,650
Totals:	903	87,811,278	51,771	504	20,982,316	8,031	1,407	108,793,594	59,802

Source: State of West Virginia, Dept. of Mines, Annual Report and Directory of Mines, 1976.

TABLE 3-32

WEST VIRGINIA COAL PRODUCTION AND EMPLOYMENT, RANKED BY COUNTY PRODUCTION, 1976

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Monongalia	10,575,252	9.72	3,416	5.71
Boone	10,468,042	9.62	5,729	9.58
McDowell	10,463,144	9.62	7,325	12.25
Wyoming	8,695,399	8.00	6,650	11.12
Logan	8,612,153	7.91	5,042	8.43
Kanawha	7,684,902	7.06	3,932	6.58
Raleigh	6,827,818	6.28	5,295	8.85
Marion	5,701,851	5.24	2,867	4.79
Nicholas	5,230,669	4.81	3,013	5.04
Harrison	5,161,463	4.74	1,666	2.78
Marshall	5,131,175	4.72	2,362	3.95
Mingo	4,434,673	4.08	2,295	3.84
Fayette	3,186,924	2.93	2,151	3.60
Barbour	2,997,290	2.76	1,433	2.40
Preston	2,479,950	2.28	749	1.25
Grant	1,600,887	1.47	842	1.41
Ohio	1,501,590	1.38	939	1.57
Upshur	1,402,719	1.29	662	1.11
Randolph	1,077,093	0.99	514	0.86
Greenbrier	1,029,437	0.95	731	1.22
Brooke	875,166	0.80	375	0.63
Mercer	805,521	0.74	583	0.97
Webster	516,294	0.47	296	0.49
Wayne	494,250	0.45	189	0.32
Lewis	382,252	0.35	166	0.28
Tucker	364,706	0.34	56	0.09
Mineral	358,638	0.33	99	0.16
Taylor	227,227	0.21	93	0.16
Braxton	177,435	0.16	114	0.19
Lincoln	172,414	0.16	91	0.15
Clay	62,731	0.05	34	0.06
Mason	45,550	0.04	49	0.08
Gilmer	44,670	0.04	38	0.06
Summers	3,531	0.003	5	0.008
Pleasants	778	0.0007	1	0.002
Totals:	108,793,594	99.99	59,802	99.99

Source: West Virginia Dept. of Mines, Annual Report, 1976.

TABLE 3- 33

WEST VIRGINIA COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1977

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Barbour	9	1,008,629	772	36	2,477,447	703	45	3,486,076	1,475
Boone	58	6,122,891	4,954	32	1,885,076	611	90	8,007,967	5,565
Braxton	1	30,980	55	7	152,837	283	8	183,817	338
Brooke	1	635,206	340	5	128,241	32	6	763,447	372
Clay	2	5,123	9	--	--	--	2	5,123	9
Fayette	37	1,790,618	1,944	36	965,931	532	73	2,756,549	2,476
Gilmer	3	61,883	22	1	8,333	9	4	70,216	31
Grant	5	1,219,126	875	10	409,941	64	15	1,629,067	939
Greenbrier	18	438,576	269	16	473,130	347	34	911,706	616
Harrison	18	3,189,506	1,079	37	1,022,164	634	55	4,211,670	1,713
Kanawha	48	4,403,809	3,366	35	1,896,626	672	83	6,300,435	4,038
Lewis	3	67,863	25	25	611,036	266	28	678,899	291
Lincoln	3	190,825	107	--	--	--	3	190,825	107
Logan	102	5,540,225	4,305	19	1,673,189	810	121	7,213,414	5,115
McDowell	143	7,383,392	6,979	18	783,926	284	161	8,167,318	7,263
Marion	9	4,922,420	2,832	8	137,403	954	17	5,059,823	3,786
Marshall	4	4,546,466	2,345	--	--	--	4	4,546,466	2,345
Mason	1	57,318	29	--	--	--	1	57,318	29
Mercer	7	583,897	559	4	19,847	15	11	603,744	574
Mineral	--	--	--	10	356,559	63	10	356,559	63
Mingo	54	2,882,275	1,915	12	524,515	341	66	3,406,790	2,256
Monongalia	26	9,363,783	3,421	20	1,116,428	248	46	10,480,211	3,669
Nicholas	50	3,809,908	2,475	39	1,207,727	563	89	5,017,635	3,038
Ohio	2	1,232,477	923	--	--	--	2	1,232,477	923
Preston	17	1,074,699	376	48	1,712,837	441	65	2,787,536	817

(Continued)

Table 3-33 Continued

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Raleigh	62	5,328,966	5,050	23	952,068	426	85	6,281,034	5,476
Randolph	18	457,248	374	11	738,978	171	29	1,196,226	545
Taylor	1	2,849	88	4	111,100	50	5	113,949	138
Tucker	--	--	--	8	350,518	56	8	350,518	56
Upshur	6	681,022	381	21	1,043,722	386	27	1,724,744	767
Wayne	2	284,336	178	--	--	--	2	284,336	178
Webster	12	109,731	76	13	364,091	174	25	473,822	250
Wyoming	109	6,604,118	6,409	11	252,142	148	120	6,856,260	6,557
Totals:	831	74,030,165	52,532	509	21,375,812	9,283	1,340	95,405,977	61,815

Source: State of West Virginia, Dept. of Mines, Annual Report and Directory of Mines, 1977.

TABLE 3-34

WEST VIRGINIA COAL PRODUCTION AND EMPLOYMENT, RANKED BY COUNTY PRODUCTION, 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Monongalia	10,480,211	10.98	3,669	5.94
McDowell	8,167,318	8.56	7,263	11.75
Boone	8,007,967	8.39	5,565	9.00
Logan	7,213,414	7.56	5,115	8.27
Wyoming	6,856,260	7.19	6,557	10.61
Kanawha	6,300,435	6.60	4,038	6.53
Raleigh	6,281,034	6.58	5,476	8.86
Marion	5,059,823	5.30	3,786	6.12
Nicholas	5,017,635	5.26	3,038	4.91
Marshall	4,546,466	4.77	2,345	3.79
Harrison	4,211,670	4.41	1,713	2.77
Barbour	3,486,076	3.65	1,475	2.39
Mingo	3,406,790	3.57	2,256	3.65
Preston	2,787,536	2.92	817	1.32
Fayette	2,756,549	2.89	2,476	4.00
Upshur	1,724,744	1.81	767	1.24
Grant	1,629,067	1.71	939	1.52
Ohio	1,232,477	1.29	923	1.49
Randolph	1,196,226	1.25	545	0.88
Greenbrier	911,706	0.96	616	1.09
Brooke	763,447	0.80	372	0.60
Lewis	678,899	0.71	291	0.47
Mercer	603,744	0.63	574	0.93
Webster	473,822	0.50	250	0.40
Mineral	356,559	0.37	63	0.10
Tucker	350,518	0.37	56	0.09
Wayne	284,336	0.30	178	0.29
Lincoln	190,825	0.20	107	0.17
Braxton	183,817	0.19	338	0.55
Taylor	113,949	0.12	138	0.22
Gilmer	70,216	0.07	22	0.04
Mason	57,318	0.06	29	0.05
Clay	5,123	0.01	9	0.01
Totals:	95,405,977	99.99	61,815	99.96

Source: West Virginia Dept. of Mines, Annual Report and Directory of Mines, 1977.

TABLE 3-35

WEST VIRGINIA COUNTY MINING EMPLOYMENT, 1976

County	Total County Employment	Coal Mining Employment	% of Total
Barbour	3,281	1,464	44.6
Boone	6,841	5,037	73.6
Braxton	1,370	61[a]	4.8
Brooke	7,263	369[a]	5.1
Clay	548	187[a]	34.1
Fayette	9,965	2,123	21.3
Gilmer	1,203	200[a]	16.6
Grant	2,456	950	38.7
Greenbrier	7,686	582	7.6
Harrison	21,694	1,616	7.4
Kanawha	79,059	5,912	7.5
Lewis	3,980	159[a]	4.0
Lincoln	1,138	165[a]	14.5
Logan	12,263	5,238[a]	42.7
McDowell	12,989	9,261	71.3
Marion	18,279	3,296	18.0
Marshall	13,126	2,382[a]	18.1
Mason	4,853	78[a]	1.6
Mercer	16,020	869	5.4
Mineral	3,414	128[a]	3.7
Mingo	5,812	1,931	33.2
Monongalia	22,468	3,879	17.3
Nicholas	7,032	3,463	49.2
Ohio	23,775	--	--
Pleasants	3,203	16[a]	0.5
Preston	4,445	824	18.5
Raleigh	21,855	5,495	25.1
Randolph	5,802	454	7.8
Summers	1,232	--	--
Taylor	1,913	--	--
Tucker	1,295	71[a]	5.5
Upshur	4,173	378	9.1
Wayne	4,552	245[a]	5.4
Webster	1,076	326[a]	30.3
Wyoming	9,390	6,573	70.0

[a] This figure represents all mining in county.

Source: West Virginia Dept. of Employment Security, Employment and Wages, Calendar Year 1976, Labor and Economic Research Series 201, "A County-by-County Record of the Employment and Wages of Workers Covered by the West Virginia Unemployment Compensation Law."

TABLE 3-36

WEST VIRGINIA MINING PAYROLL AND AVERAGE WEEKLY SALARY, 1976

County	Total County Payroll	Coal Mining Payroll	% of Total	Mining Average Weekly Salary
Barbour	$ 37,752,762	$ 24,504,652	64.9	$ 321.88
Boone	93,246,203	76,891,277	82.5	293.56
Braxton	10,670,310	567,667[a]	5.3	178.96
Brooke	91,146,674	6,304,754[a]	6.9	328.58
Clay	5,023,584	2,604,773[a]	51.9	267.87
Fayette	106,019,139	34,519,658	32.6	312.68
Gilmer	9,695,989	2,258,418	23.3	217.16
Grant	26,553,805	13,783,002	51.9	279.00
Greenbrier	61,031,032	7,919,498	13.0	261.68
Harrison	218,437,067	23,656,880	10.8	281.52
Kanawha	916,693,063	94,122,855	10.3	306.16
Lewis	32,411,046	1,892,954[a]	5.8	228.95
Lincoln	9,262,638	1,875,099[a]	20.2	218.54
Logan	145,705,831	80,154,566[a]	55.1	294.28
McDowell	179,142,909	150,366,392	83.9	312.24
Marion	194,298,645	53,316,666	27.4	311.08
Marshall	164,765,167	35,604,946[a]	21.6	287.45
Mason	53,548,650	1,153,450[a]	2.2	284.38
Mercer	154,939,014	14,440,303	9.3	319.56
Mineral	31,077,854	1,765,438	5.7	265.24
Mingo	65,243,530	30,807,915	47.2	306.81
Monongalia	215,749,200	62,292,375	28.8	308.82
Nicholas	85,914,038	54,718,666	63.7	303.86
Ohio	222,237,296	--	--	--
Pleasants	40,782,329	12,650[a]	0.03	--
Preston	41,659,847	13,244,066	31.8	309.09
Raleigh	245,195,850	96,403,549	39.3	337.38
Randolph	48,151,637	7,083,977	14.7	300.06
Summers	7,940,665	--	--	--
Taylor	13,617,516	--	--	--
Tucker	9,307,704	1,025,853[a]	11.0	277.86
Upshur	37,032,792	6,402,521	17.3	325.72
Wayne	43,974,794	3,563,658[a]	8.1	279.72
Webster	9,829,254	4,940,245[a]	50.3	291.43
Wyoming	118,372,985	94,360,155	70.9	276.07

[a] This figure represents all mining in county.

Source: West Virginia Dept. of Employment Security, Employment and Wages, Calendar Year 1976, Labor and Economic Research Series 201, "A County-by-County Record of the Employment and Wages of Workers Covered by the West Virginia Unemployment Compensation Law."

THE NON-ORBES EASTERN STATES

The five non-ORBES eastern states of Alabama, Georgia, Maryland, Tennessee and Virginia accounted for 10.9 percent of national coal production (73.8 million tons) and 13.8 percent of national coal employment (27,990 workers) in 1976, according to U.S. Department of Energy figures. Table 3-37 provides a more detailed breakdown by state of the number of mines, tonnage, and employees, underground and surface, for each state. These figures are taken from the state reports on the coal industry, not the federal statistical reports. Somewhat different reporting procedures are used, and the figures do not coincide with the data from the federal reports used above and in Chapter II.

In 1976, the five non-ORBES eastern states had a total of 1,564 coal mines (675 underground and 889 surface) that produced a total of 72.9 million tons (41.1 million tons underground and 31.9 million tons surface), employing a total of 30,955 workers (19,722 underground and 11,233 surface), according to state report data. Underground mining thus accounted for 43 percent of the mines, 56 percent of the tonnage, and 64 percent of the employees. Surface mining accounted for 57 percent of the mines, 44 percent of the tonnage, and 36 percent of the employees in 1976.

There were a total of 42 coal producing counties in 1976 in the five non-ORBES eastern states. Of these counties, 11 produced over a million tons of coal and 5 of these produced over 5 million tons of coal in 1976. The following sections detail coal production and employment, underground and surface, by county in 1976 and in some cases 1977 for these states.

TABLE 3- 37

COAL MINES, PRODUCTION, AND EMPLOYEES, SURFACE AND UNDERGROUND, IN THE NON-ORBES EASTERN STATES, 1976

State	Number of Mines			Tonnage			Employees		
	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total
AL	22	253	275	7,392,404	13,670,750	21,063,154	5,233	6,293	11,526
GA	0	3	3	--	186,000	186,000	--	100	100
MD	2	112	114	175,016	2,520,163	2,695,179	53	651	704
TN	160	27	187	7,431,488	1,568,459	8,999,947	3,124	377	3,501
VA	491	494	985	26,055,378	13,940,168	39,995,546	11,312	3,812	15,124
Totals:	675	889	1,564	41,054,286	31,885,540	72,939,826	19,722	11,233	30,955

Source: Individual state reports.

ALABAMA

In fiscal year 1975-76 (October 1975 through September 1976), Alabama had a total of 275 coal mines (22 underground and 253 surface) that produced 21.1 million tons (7.4 million underground and 13.7 million surface) and employed 11,526 workers (5,233 underground and 6,293 surface).[8] Underground mining accounted for 8 percent of the mines, 35 percent of the tonnage, and 45 percent of the employees. Surface mining accounted for 92 percent of the mines, 65 percent of the tonnage, and 55 percent of the employees in fiscal year 1975-76. Figure 3-7 is a map identifying Alabama coal producing counties in 1975-76. Tables 3-38 and 3-39 detail and rank production by county for 1975-76.

In fiscal year 1976-77 (October 1976 through September 1977), Alabama had a total of 278 coal mines (23 underground and 255 surface) that produced 22.6 million tons (7.3 million underground and 15.3 million surface) and employed 10,294 workers (5,570 underground and 4,724 surface). Underground mining accounted for 8 percent of the mines, 32 percent of the tonnage and 54 percent of the employees. Surface mining accounted for 92 percent of the mines, 68 percent of the tonnage, and 46 percent of the employees in fiscal year 1976-77.

Alabama had 17 coal producing counties in fiscal year 1975-76 and 18 in fiscal year 1976-77. In 1975-76 and 1976-77, three counties produced over a million tons each, with two of these, Jefferson and Walker, producing over 5 million tons each. Over a thousand miners were employed in these two counties in 1975-76, and in 1976-77 over a thousand miners were also employed in Tuscaloosa County. We do not have information on coal mining payrolls or average weekly wages by county for Alabama.

GEORGIA

Georgia has only one major mining company, the Lookout Mountain Coal Company, which operates 3 surface mines in Chattooga County, producing approximately 186,000 tons of coal in 1976 and 1977 and employing some 100 workers. The coal is apparently metallurgical grade. The company holds some 2 million tons of reserves.

ALABAMA - 1976

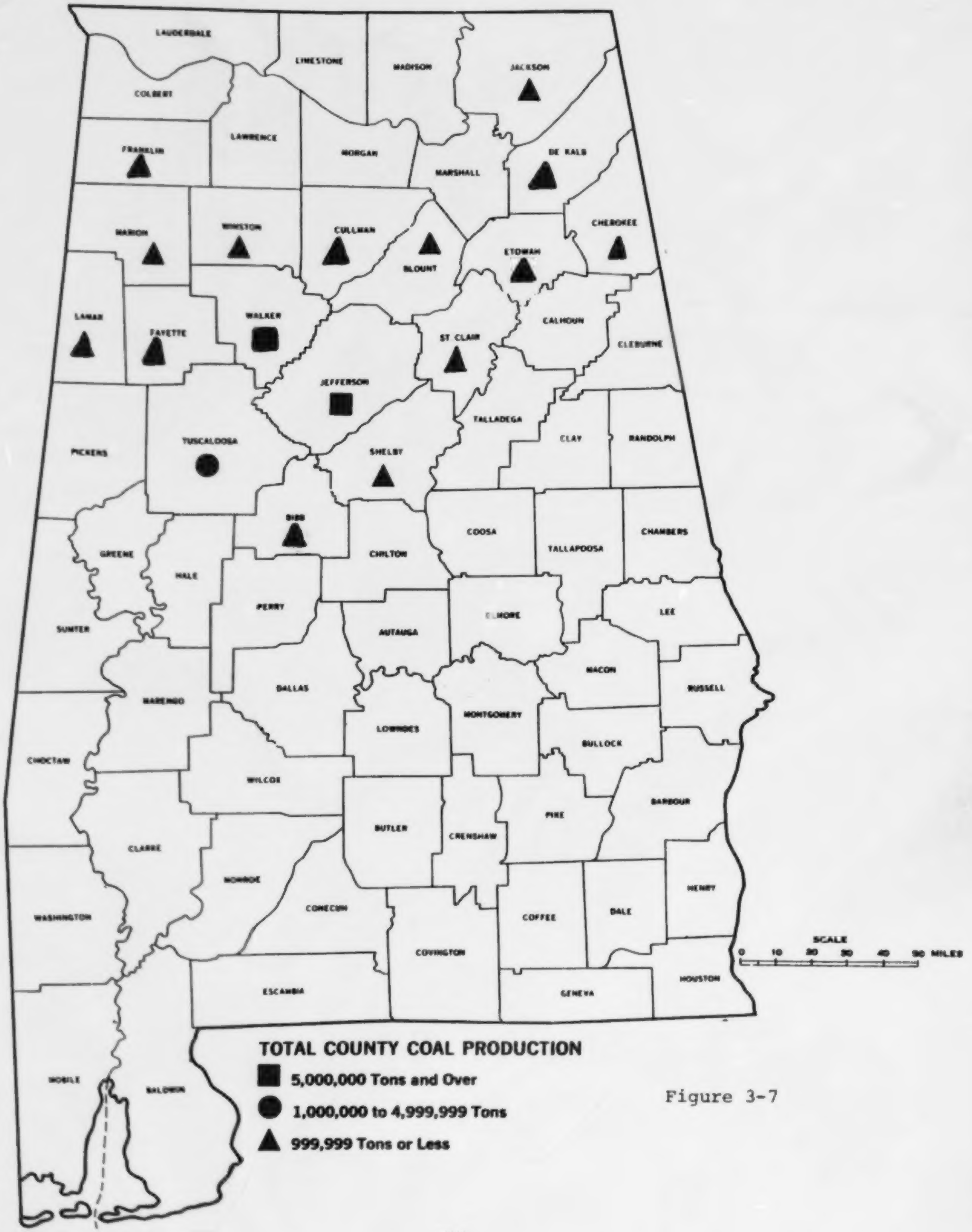

LAUDERDALE
LIMESTONE
MADISON
JACKSON
COLBERT
LAWRENCE
MORGAN
MARSHALL
DE KALB
FRANKLIN
MARION
WINSTON
CULLMAN
BLOUNT
ETOWAH
CHEROKEE
LAMAR
FAYETTE
WALKER
ST CLAIR
CALHOUN
CLEBURNE
JEFFERSON
TALLADEGA
CLAY
RANDOLPH
PICKENS
TUSCALOOSA
SHELBY
BIBB
COOSA
TALLAPOOSA
CHAMBERS
GREENE
HALE
CHILTON
PERRY
AUTAUGA
ELMORE
LEE
SUMTER
MACON
RUSSELL
DALLAS
MARENGO
LOWNDES
MONTGOMERY
BULLOCK
CHOCTAW
WILCOX
BUTLER
CRENSHAW
PIKE
BARBOUR
CLARKE
MONROE
CONECUH
WASHINGTON
COFFEE
DALE
HENRY
COVINGTON
HOUSTON
ESCAMBIA
GENEVA
MOBILE
BALDWIN
SCALE
0 10 20 30 40 50 MILES
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less

Figure 3-7

TABLE 3- 38

ALABAMA COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE,
BY COUNTY, FISCAL YEAR 10/1/75 - 9/30/76

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Bibb	--	--	--	5	184,832	83	5	184,832	83
Blount	1	13,200	36	20	762,541	474	21	775,741	510
Cherokee	--	--	--	6	62,375	86	6	62,375	86
Cullman	--	--	--	20	732,082	351	20	732,082	351
DeKalb	--	--	--	15	280,342	363	15	280,342	363
Etowah	--	--	--	2	24,222	13	2	24,222	13
Fayette	1	736,105	465	4	257,562	132	5	993,667	597
Franklin	--	--	--	11	203,478	122	11	203,478	122
Jackson	2	29,114	11	5	613,238	199	7	642,352	210
Jefferson	13	4,690,307	3,605	28	2,413,994	850	41	7,104,301	4,455
Lamar	--	--	--	1	68,674	38	1	68,674	38
Marion	2	14,502	18	23	727,629	416	25	742,131	434
Shelby	--	--	--	4	477,438	175	4	477,438	175
St. Clair	--	--	--	14	100,682	122	14	100,682	122
Tuscaloosa	--	--	--	21	2,458,012	835	21	2,458,012	835
Walker	3	1,909,176	1,098	55	3,765,974	1,694	58	5,675,150	2,792
Winston	--	--	--	19	537,675	340	19	537,675	340
Totals:	22	7,392,404	5,233	253	13,670,750	6,293	275	21,063,154	11,526

Source: Alabama Dept. of Industrial Relations, Annual Statistical Report, Fiscal Year 1975-1976 (9/30/75-10/1/76).

TABLE 3- 39

ALABAMA COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, FISCAL YEAR 1975-76

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Jefferson	7,104,301	33.73	4,455	38.65
Walker	5,675,150	26.99	2,792	24.22
Tuscaloosa	2,458,012	11.67	835	7.24
Fayette	993,667	4.72	597	5.18
Blount	775,741	3.68	510	4.42
Marion	742,131	3.52	434	3.77
Cullman	732,082	3.48	351	3.05
Jackson	642,352	3.05	210	1.82
Winston	537,675	2.55	340	2.95
Shelby	477,438	2.27	175	1.52
DeKalb	280,342	1.33	363	3.15
Franklin	203,478	0.97	122	1.06
Bibb	184,832	0.08	83	0.72
St. Clair	100,682	0.48	122	1.06
Lamar	68,674	0.33	38	0.33
Cherokee	62,375	0.30	86	0.75
Etowah	24,222	0.11	13	0.11
Totals:	21,063,154	100.06	11,526	100.00

Source: Alabama Dept. of Industrial Relations, Annual Statistical Report, Fiscal Year 1975-76.

TABLE 3- 40

ALABAMA COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, FISCAL YEAR 10/1/76 - 9/30/77

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Bibb	--	--	--	4	226,458	82	4	226,458	82
Blount	1	9,014	24	20	651,572	174	21	660,586	198
Cherokee	--	--	--	9	149,495	122	9	149,495	122
Cullman	--	--	--	14	691,253	274	14	691,253	274
DeKalb	--	--	--	13	392,660	181	13	392,660	181
Etowah	--	--	--	1	18,198	5	1	18,198	5
Fayette	1	788,937	508	7	161,010	114	8	949,947	622
Franklin	--	--	--	11	223,464	97	11	233,464	97
Jackson	2	29,353	14	2	521,020	202	4	550,373	216
Jefferson	12	3,626,903	3,276	27	2,216,240	538	39	5,843,143	3,814
Lamar	--	--	--	1	176,830	26	1	176,830	26
Marion	2	15,080	19	33	661,500	250	35	676,580	269
Marshall	--	--	--	1	1,816	9	1	1,816	9
Shelby	--	--	--	2	455,172	149	2	455,172	149
St. Clair	--	--	--	10	70,069	98	10	70,069	98
Tuscaloosa	1	55,197	123	29	3,534,465	1,057	30	3,589,662	1,180
Walker	4	2,763,875	1,606	46	4,390,355	1,058	50	7,154,230	2,664
Winston	--	--	--	25	745,502	288	25	745,502	288
Totals:	23	7,288,359	5,570	255	15,287,079	4,724	278	22,575,438	10,294

Source: Alabama Dept. of Industrial Relations, Annual Statistical Report, Fiscal Year 1976-1977 (10/1/76 - 9/30/77)

TABLE 3- 41

ALABAMA COAL PRODUCTION AND EMPLOYMENT, RANKED BY COUNTY PRODUCTION, FISCAL YEAR 1976-77

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Walker	7,154,230	21.69	2,664	25.88
Jefferson	5,843,143	25.88	3,814	37.05
Tuscaloosa	3,589,662	15.90	1,180	11.46
Fayette	949,947	4.21	622	6.04
Winston	745,502	3.30	288	2.80
Cullman	691,253	3.06	274	2.66
Marion	676,580	3.00	269	2.60
Blount	660,586	2.93	198	1.92
Jackson	550,373	2.44	216	2.10
Shelby	455,172	2.02	149	1.45
DeKalb	392,660	1.74	181	1.76
Bibb	226,458	1.00	82	0.80
Franklin	223,464	0.99	97	0.94
Lamar	176,830	0.78	26	0.25
Cherokee	149,495	0.66	122	1.19
St. Clair	70,069	0.31	98	0.95
Etowah	18,198	0.08	5	0.05
Marshall	1,816	0.01	9	0.09
Totals:	22,575,438	100.00	10,294	99.99

Source: Alabama Dept. of Industrial Relations, Annual Statistical Report, Fiscal Year 1976-77.

MARYLAND

Coal production in Maryland takes place in Allegany and Garrett Counties at the end of the state's western panhandle. In 1976 Maryland had a total of 114 coal mines (2 underground and 112 surface) that produced 2.7 million tons (175,000 underground and 2.5 million surface) and employed 704 workers (53 underground and 651 surface). Underground mining accounted for 2 percent of the mines, 6 percent of the tonnage, and 8 percent of the employees. Surface mining accounted for 98 percent of the mines, 94 percent of the tonnage, and 92 percent of the employees. In 1976 Allegany County had no underground mines and 47 surface mines producing just under a million tons and 290 workers; Garrett County had 2 underground mines producing 175,000 tons with 53 employees, and 65 surface mines producing 1.5 million tons with 361 workers.[9]

In 1977 Maryland had a total of 143 coal mines (3 underground and 140 surface) that produced 3.0 million tons (261,000 underground and 3.0 million surface) and employed 891 workers (65 underground and 826 surface). Underground mining accounted for 2 percent of the mines, 9 percent of the tonnage, and 7 percent of the employees. Surface mining accounted for 98 percent of the mines, 91 percent of the tonnage, and 93 percent of the employees. In 1977 Allegany County had no underground mines, and 54 surface mines producing 1.1 million tons with 323 workers. Garrett County had 3 underground mines producing 261,000 tons with 65 workers, and 86 surface mines producing 1.6 million tons with 503 workers. We do not have information on coal mining payrolls or average weekly wages by county for Maryland.

TENNESSEE

In fiscal year 1975-76 (July 1975 through June 1976), Tennessee had a total of 187 coal mines (160 underground and 27 surface) that produced 9.0 million tons (7.4 million underground and 1.6 million surface) and employed 3,501 workers (3,124 underground and 377 surface). Underground mining accounted for 86 percent of the mines, 83 percent of the tonnage, and 89 percent of the employees. Surface mining accounted for 14 percent of the mines, 17 percent of the tonnage, and 11 percent of the employees. Tables 3-42 and 3-43 detail and rank production and employment by county for fiscal year 1975-76. Figure 3-8 maps the coal producing counties.[10]

In fiscal year 1976-77, total coal production in Tennessee rose to 9.6 million tons, with 3,719 employees. Production continued to climb in fiscal year 1977-78 to 9.9 million tons with 4,576 employees.

Tennessee had four counties producing over a million tons of coal in fiscal year 1975-76: Anderson, Campbell, Claiborne, and Scott. Each of these had approximately 500 or more employees in the industry. In fiscal year 1977-78, Anderson and Campbell Counties each produced over 2 million

TENNESSEE - 1976

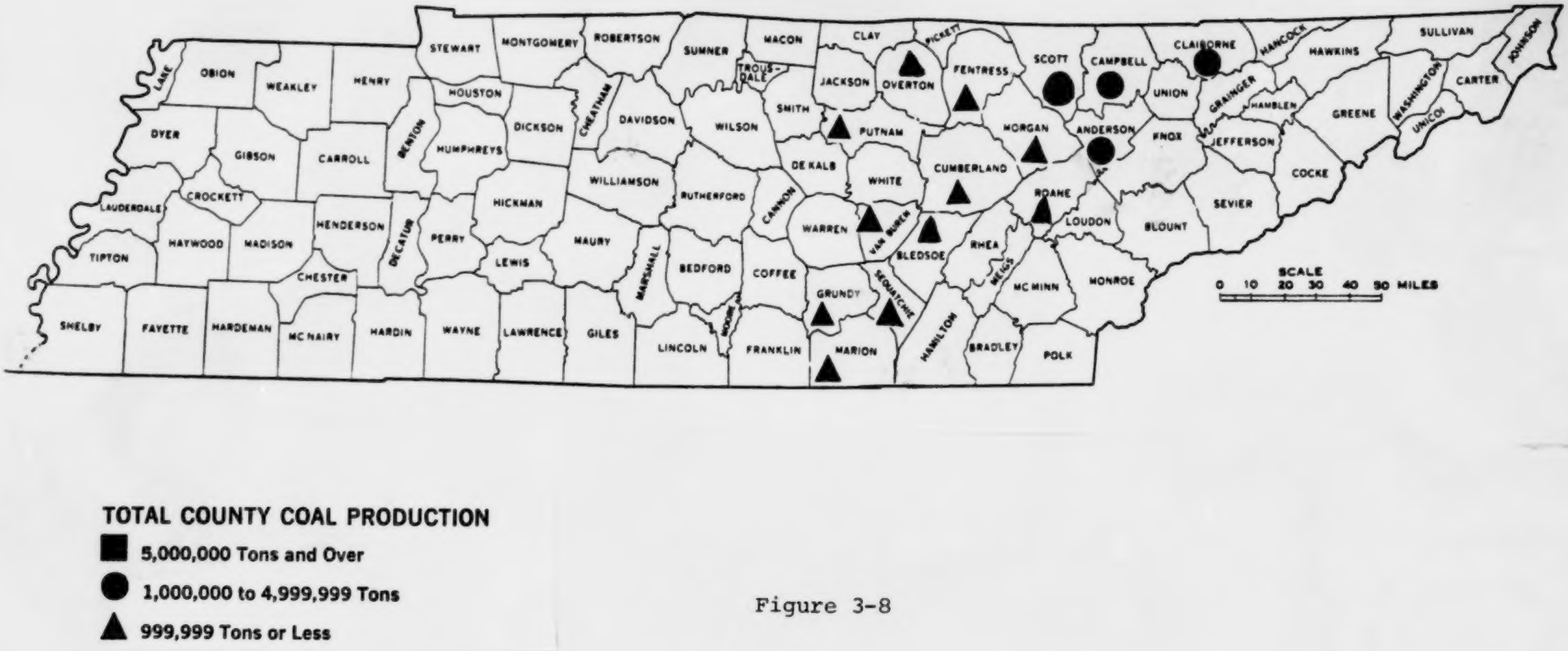

LAKE
OBION
WEAKLEY
HENRY
STEWART
MONTGOMERY
ROBERTSON
SUMNER
MACON
CLAY
PICKETT
TROUS-DALE
JACKSON
OVERTON
FENTRESS
SCOTT
CAMPBELL
CLAIBORNE
HANCOCK
HAWKINS
SULLIVAN
JOHNSON
CARTER
WASHINGTON
UNICOI
GREENE
HAMBLEN
GRAINGER
UNION
DYER
GIBSON
CARROLL
BENTON
HOUSTON
HUMPHREYS
DICKSON
CHEATHAM
DAVIDSON
WILSON
SMITH
PUTNAM
MORGAN
ANDERSON
KNOX
JEFFERSON
COCKE
CROCKETT
LAUDERDALE
HENDERSON
DECATUR
PERRY
HICKMAN
WILLIAMSON
RUTHERFORD
CANNON
DE KALB
WHITE
CUMBERLAND
ROANE
LOUDON
BLOUNT
SEVIER
TIPTON
HAYWOOD
MADISON
CHESTER
LEWIS
MAURY
MARSHALL
BEDFORD
COFFEE
WARREN
VAN BUREN
BLEDSOE
RHEA
MEIGS
MC MINN
MONROE
SHELBY
FAYETTE
HARDEMAN
MC NAIRY
HARDIN
WAYNE
LAWRENCE
GILES
LINCOLN
MOORE
FRANKLIN
GRUNDY
SEQUATCHIE
MARION
HAMILTON
BRADLEY
POLK
SCALE
0 10 20 30 40 50 MILES
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less

Figure 3-8

TABLE 3-42

TENNESSEE COAL MINES, PRODUCTION, AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, FY 1975-76

County	Underground			Surface			Total		
	Mines	Tonnage	Employees	Mines	Tonnage	Employees	Mines	Tonnage	Employees
Anderson	22	1,337,488	426	5	322,397	67	27	1,659,885	493
Bledsoe	6	147,691	51	--	--	--	6	147,691	51
Campbell	31	1,477,155	608	5	142,936	54	36	1,620,091	662
Claiborne	6	1,032,848	527	3	294,332	46	9	1,327,180	573
Cumberland	3	113,645	24	--	--	--	3	113,645	24
Fentress	9	303,987	87	1	187,561	59	10	491,548	146
Grundy	4	52,622	21	--	--	--	4	52,622	21
Marion	16	538,108	254	--	--	--	16	538,108	254
Morgan	9	410,448	173	7	254,362	65	16	664,810	238
Overton	1	32,995	29	--	--	--	1	32,995	29
Putnam	2	11,094	53	--	--	--	2	111,094	53
Roane	2	34,511	9	1	32,080	6	3	66,591	15
Scott	36	1,052,773	499	4	221,932	59	40	1,274,705	558
Sequatchie	9	678,043	335	1	112,859	21	10	790,902	356
Van Buren	4	108,080	28	--	--	--	4	108,080	28
Totals:	160	7,431,488	3,124	27	1,568,459	377	187	8,999,947	3,501

Source: State of Tennessee, Dept. of Labor, Annual Report, 1976.

TABLE 3-43

TENNESSEE COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION, FISCAL YEAR 1975-76

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Anderson	1,659,885	18.44	493	14.08
Campbell	1,620,091	18.00	662	18.91
Claiborne	1,327,180	14.75	573	16.37
Scott	1,274,705	14.16	558	15.94
Sequatchie	790,902	8.79	356	10.17
Morgan	664,810	7.39	238	6.80
Marion	538,108	5.98	254	7.25
Fentress	491,548	5.46	146	4.17
Bledsoe	147,691	1.64	51	1.46
Cumberland	113,645	1.26	24	0.68
Putnam	111,094	1.23	53	1.51
Van Buren	108,080	1.20	28	0.80
Roane	66,591	0.74	15	0.43
Grundy	52,622	0.58	21	0.60
Overton	32,995	0.36	29	0.83
Totals:	8,999,947	99.98	3,501	100.00

Source: Tennessee Dept. of Labor, Annual Report, 1976.

tons, with employment of 821 and 1,052 workers respectively. Sequatchie County produced over a million tons in fiscal year 1976-77, but then dropped back below in 1977-78. We do not have information on coal mining payrolls or average weekly wages by county for Tennessee.

VIRGINIA

In 1976 Virginia produced a total of 40.0 million tons of coal (26.1 million underground and 13.9 million surface) and employed 15,124 workers (11,312 underground and 3,812 surface). Underground mining accounted for 65 percent of the tonnage and 75 percent of the employment in the industry. Surface mining accounted for 35 percent of the tonnage and 25 percent of the employment. Tables 3-44 and 3-45 detail production and employment by county for 1976. Figure 3-9 maps the coal producing counties.[11]

In 1977 Virginia produced a total of 37.5 million tons of coal (23.9 million underground and 13.6 surface) and employed 15,742 workers (11,556 underground and 4,186 surface). Underground mining accounted for 64 percent of the tonnage and 73 percent of the employment. Surface mining accounted for 36 percent of the tonnage and 27 percent of the employment. Tables 3-44 and 3-46 detail production and employment by county for 1977.

Virginia had 7 coal producing counties in 1976 and 6 in 1977. Buchanan has been the largest producer, with 12.7 million tons in 1977, followed by Wise, Dickenson, Tazwell and Russell Counties. Buchanan has over 7,000 employees in the industry, Wise has around 4,000, and Dickenson nearly 2,000. We do not have information on coal mining payrolls or average weekly wages by county for Virginia.

VIRGINIA - 1976

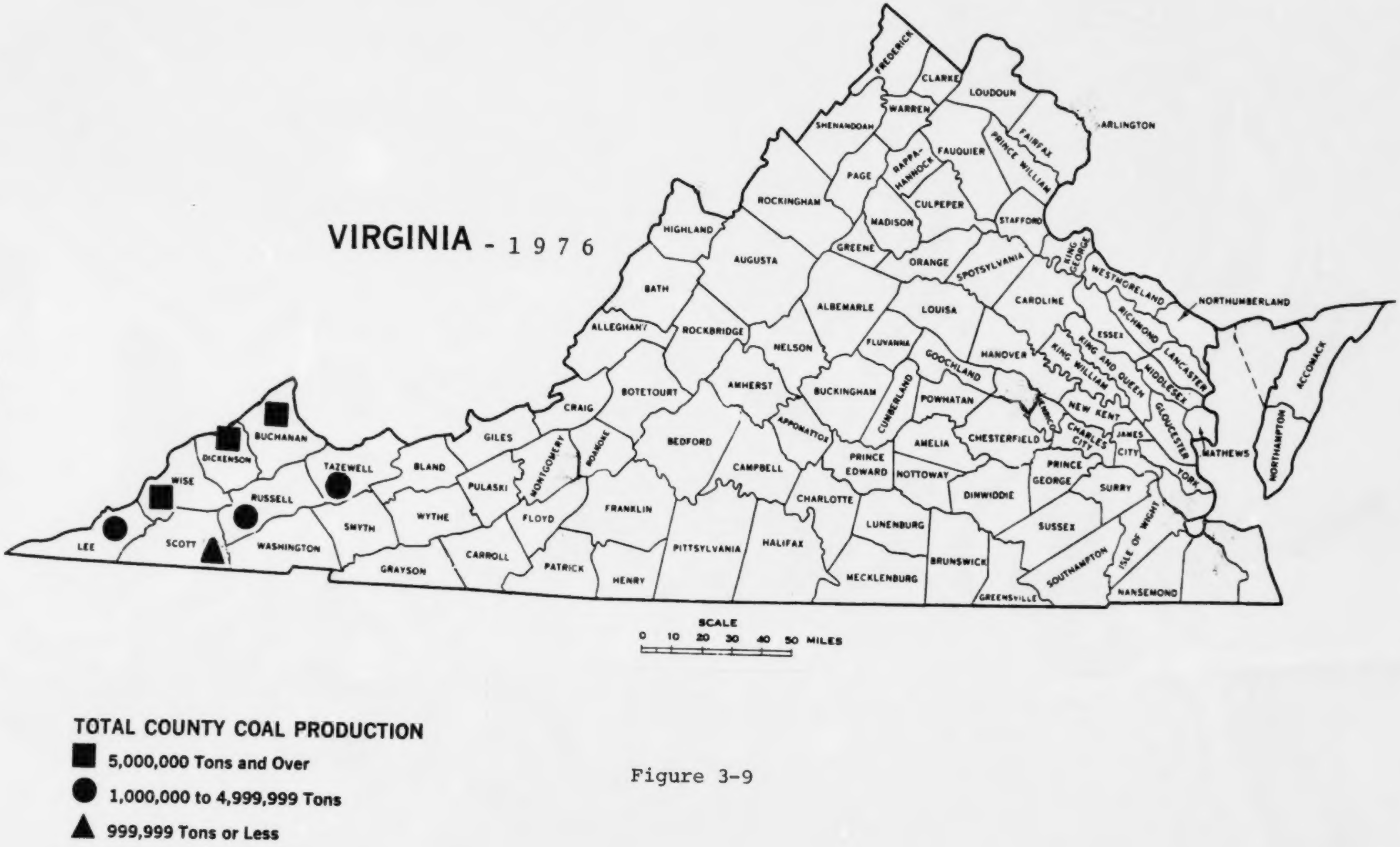

FREDERICK
CLARKE
LOUDOUN
WARREN
SHENANDOAH
ARLINGTON
FAIRFAX
PRINCE WILLIAM
RAPPA-HANNOCK
FAUQUIER
PAGE
ROCKINGHAM
CULPEPER
MADISON
STAFFORD
HIGHLAND
GREENE
ORANGE
AUGUSTA
KING GEORGE
SPOTSYLVANIA
WESTMORELAND
BATH
ALBEMARLE
LOUISA
CAROLINE
NORTHUMBERLAND
ALLEGHANY
ROCKBRIDGE
RICHMOND
ESSEX
NELSON
FLUVANNA
GOOCHLAND
HANOVER
KING AND QUEEN
LANCASTER
KING WILLIAM
MIDDLESEX
ACCOMACK
AMHERST
BUCKINGHAM
CUMBERLAND
POWHATAN
HENRICO
NEW KENT
GLOUCESTER
BOTETOURT
CRAIG
CHARLES CITY
JAMES CITY
NORTHAMPTON
MATHEWS
GILES
BEDFORD
APPOMATTOX
AMELIA
CHESTERFIELD
BUCHANAN
ROANOKE
MONTGOMERY
CAMPBELL
PRINCE EDWARD
NOTTOWAY
PRINCE GEORGE
SURRY
YORK
DICKENSON
TAZEWELL
BLAND
WISE
PULASKI
RUSSELL
FRANKLIN
CHARLOTTE
DINWIDDIE
WYTHE
SMYTH
FLOYD
LUNENBURG
SUSSEX
LEE
SCOTT
WASHINGTON
PITTSYLVANIA
HALIFAX
ISLE OF WIGHT
CARROLL
PATRICK
BRUNSWICK
SOUTHAMPTON
GRAYSON
HENRY
MECKLENBURG
GREENSVILLE
NANSEMOND
SCALE
0 10 20 30 40 50 MILES
TOTAL COUNTY COAL PRODUCTION
■ 5,000,000 Tons and Over
● 1,000,000 to 4,999,999 Tons
▲ 999,999 Tons or Less

Figure 3-9

TABLE 3-44

VIRGINIA PRODUCTION AND EMPLOYEES, UNDERGROUND AND SURFACE, BY COUNTY, 1976 AND 1977

County	Underground		Surface		Total	
	Tonnage	Employees	Tonnage	Employees	Tonnage	Employees
1976:						
Buchanan	11,583,960	5,864	4,219,547	1,328	15,803,507	7,192
Dickenson	3,790,589	1,481	1,508,017	497	5,298,606	1,978
Lee	625,753	243	674,419	177	1,300,172	420
Russell	1,268,686	688	439,344	208	1,708,030	896
Scott	3,860	3	8,825	5	12,685	8
Tazewell	3,183,963	581	398,693	121	3,582,656	702
Wise	5,598,567	2,452	6,691,323	1,476	12,289,890	3,928
Totals:	26,055,378	11,312	13,940,168	3,812	39,995,546	15,124
1977:						
Buchanan	12,730,829	5,960	4,020,006	1,569	16,750,835	7,529
Dickenson	3,201,195	1,390	1,526,329	490	4,727,524	1,880
Lee	553,053	253	772,501	198	1,325,554	451
Russell	950,590	740	615,883	235	1,566,473	975
Scott	--	--	--	--	--	--
Tazewell	1,724,245	662	450,689	137	2,174,934	799
Wise	4,771,506	2,551	6,196,305	1,557	10,967,811	4,108
Totals:	23,931,418	11,556	13,581,713	4,186	37,513,131	15,742

Source: Virginia Dept. of Labor and Industry, Annual Report, 1976 and 1977.

TABLE 3- 45

VIRGINIA COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION 1976

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Buchanan	15,803,507	39.51	7,192	47.55
Wise	12,289,890	30.73	3,928	25.97
Dickenson	5,298,606	13.25	1,978	13.08
Tazewell	3,582,656	8.96	702	4.64
Russell	1,708,030	4.27	896	5.92
Lee	1,300,172	3.25	420	2.78
Scott	12,685	0.03	8	0.05
Totals:	39,995,546	100.00	15,124	99.99

Source: Virginia Dept. of Labor and Industry, Annual Report, 1976.

TABLE 3- 46

VIRGINIA COAL PRODUCTION AND EMPLOYMENT RANKED BY COUNTY PRODUCTION 1977

County	Production		Employees	
	Tonnage	% of Total	Number	% of Total
Buchanan	16,750,835	44.65	7,529	47.83
Wise	10,967,811	29.24	4,108	26.09
Dickenson	4,727,524	12.60	1,880	11.94
Tazewell	2,174,934	5.80	799	5.08
Russell	1,566,473	4.18	975	6.19
Lee	1,325,554	3.53	451	2.86
Totals:	37,513,131	100.00	15,742	99.99

Source: Virginia Dept. of Labor and Industry, Annual Report, 1977.

SECONDARY AND INDIRECT EMPLOYMENT

The information on employment and wages presented thus far in this chapter has concerned primary employment, people working directly in the production of coal. Coal production also results in secondary employment of people in immediately related enterprises and indirect employment resulting from the purchases of goods and services by primary employees. A study by Spindletop Research for the Kentucky Coal Association divided secondary employment into transportation services, other supplies and services, and electric power supplies. The transportation of coal takes place by railroad, truck, and barge in the eastern states. In 1970, Spindletop Research estimated that railroads employed 5,230 Kentuckians who earned $48 million in wages; some 2,630 drivers operated 2,000 coal trucks and earned $21 million in wages; and 420 persons were employed by barge lines earning over $4 million in wages while moving Kentucky coal. Supplies and services essential to the coal industry include sales and repair of machinery, hardware, and electrical equipment; sales of oil and fuel; and consulting services on engineering, reclamation, and legal problems. Spindletop estimated employment in this category to be 3,080 with a total wages of $23.4 million. Electrical power required by coal mines resulted in the employment of 200 people with wages of $1.6 million. A multiplier effect of 1.9 was estimated for Kentucky as a whole resulting from primary coal employment. With a primary coal employment of 21,560 in 1970 multiplied by 1.9, a total of 40,960 jobs were estimated to have been created as a direct or indirect result of Kentucky coal production. Subtracting the primary employment of 21,560 and the secondary employment of 11,560 left an estimated 7,840 persons employed as an indirect result of the Kentucky coal industry, with an estimated total wages of $47 million.[12]

Within the scope and resources of this study, we have not been able to obtain the data that would provide a reasonable basis for estimating the secondary and indirect employment effects of the coal industry in the ORBES states. The various states do not tabulate the number of coal trucks separately from other non-farm trucks, or the number of railroad employees hauling coal as distinct from all railroad employees. The Spindletop study had to survey a number of companies to obtain the bases for estimating secondary employment; we were not able to undertake such a project with the resources available to us. While the methodology for deriving input-output models of state or regional economies has been presented,[13] such a procedure was also beyond our means. It is clear that the amount of coal that moves by truck varies greatly from state to state, as well as by method of mining, with surface mined coal almost always being transported at least some distance by truck while the underground mines of the major companies often transport coal on conveyor belts directly from the mine to railhead. Indirect multiplier effects are obviously greater for coal producing counties with a diversified economic structure than for isolated counties in which coal is the single industry and people shop for major purchases outside the county in regional centers. A great deal of work remains to be done to estimate the amount of secondary and indirect employment generated by the coal industry, both within the producing county and the surrounding region, taking into account the differences among various coal producing counties and states.

REFERENCES

[1] Statistics from the federal government on coal production and employment by state appear first in the "Weekly Coal Report" series of the Energy Information Administration of the U.S. Department of Energy. Revised statistics are published by the same office in the annual "Coal--Bituminous and Lignite" report. Previously, these reports were eventually published in the Bureau of Mines' Minerals Yearbook. Information from these and other sources is compiled in the National Coal Association's annual Coal Data and biennial Coal Facts.

[2] Illinois coal production data is presented in the Annual Report of the Illinois Department of Mines and Minerals, 414 East Canedy Street, Springfield, IL 62703.

[3] Indiana coal production data is presented in the Annual Report of the Indiana Bureau of Mines and Mining, 1119 Wabash Avenue, Terre Haute, IN 47807.

[4] Kentucky coal production data is presented in the Annual Report of the Kentucky Department of Mines and Minerals, P.O. Box 680, Lexington, KY 40501. Data on wages from unemployment insurance reports is available from the Department for Unemployment Insurance, Bureau of Social Insurance, Kentucky Department for Human Resources, Frankfort, KY 40601.

[5] Ohio coal production data is presented in the annual Report of the Ohio Division of Mines, P.O. Box 825, Columbus, OH 43216. Data on wages from unemployment insurance reports is available from the Research and Statistics Division, Ohio Bureau of Employment Services, Columbus, OH 43216.

[6] Pennsylvania coal production data is presented in the Annual Report on Mining, Oil and Gas of the Pennsylvania Department of Environmental Resources, P.O. Box 1467, Harrisburg, PA 17120. Data on wages from unemployment insurance reports is available from the Bureau of Employment Security, Pennsylvania Department of Labor and Industry, Harrisburg, PA 17120. An informative report, Coal in Pennsylvania, is published by the Keystone Bituminous Coal Association, 311 Towne House, Harrisburg, PA 17102.

[7] West Virginia coal production data is presented in the Annual Report and Directory of Mines of the West Virginia Department of Mines, Room E-151, State Capitol Building, Charleston, WV 25305. An annual West Virginia Mineral Producers Directory and quarterly listing of Active Surface Mines in West Virginia are issued by the West Virginia Geological & Economic Survey, P.O. Box 879, Morgantown, WV 26505. Data on wages from unemployment insurance reports is available from the Labor and Economic Research

Division, West Virginia Department of Employment Security, 112 California Avenue, Charleston, WV 25305. An informative annual report, West Virginia Coal Facts, is published by the West Virginia Coal Association, 1340 One Valley Square, Charleston, WV 25301.

[8] Alabama coal production data is presented in the Annual Report of the Division of Safety and Inspection, Alabama Department of Industrial Relations, 1816 Eighth Avenue North, Birmingham, AL 35202.

[9] Maryland coal production data is presented in the Annual Report of the Maryland Bureau of Mines, P.O. Drawer C, Westernport, MD 21562.

[10] Tennessee coal production data is presented in the Annual Report of the Tennessee Department of Labor, Suite A, Second Floor, 501 Union Building, Nashville, TN 37219.

[11] Virginia coal production data is presented in the Annual Report of the Virginia Department of Labor and Industry, P.O. Box 12064, Richmond, VA 23241.

[12] Darrell Gilliam and David Whitehead, The Employment and Expenditures Effect of the Kentucky Coal Industry in 1970 (Lexington: Spindletop Research, April 1972).

[13] William H. Miernyk, et al., Simulating Regional Economic Development (Lexington, MA: D.C. Heath, 1970); and Nasser Sherafat, "The Impact of the Coal Industry on Output, Income and Employment in Eastern Kentucky: An Input-Output Analysis" (unpublished Ph.D. dissertation, Univ. of Kentucky, 1978).

CHAPTER IV

COAL CONSUMPTION AND DISTRIBUTION

COAL CONSUMPTION IN THE UNITED STATES

The leading consumer of coal in the United States is the electric utility industry. The amount of coal used by electric utilities is rising steadily, from 392 million tons in 1974 to 406 million tons in 1975, 448 million in 1976, and 577 million in 1977.[1] Electric utilities accounted for some 79 percent of national coal consumption in the first half of 1978, and will probably account for over 80 percent in 1979. Figure 4-1 shows the proportions of coal consumed by electric utilities (77 percent), coke and gas plants (13 percent), and all others (10 percent--primarily industrial users, as retail sales constitute less than one percent of coal sales) in the first three quarters of 1977. Figure 4-1 also shows the modes of transportation to each of the major consumption groups. Railroads are still the leading mode with 53 percent of domestically consumed coal traffic, followed by water with 23 percent, truck with 13 percent, and tramways, conveyors, and private railroads with 11 percent (this latter category services primarily the electric utilities). This chapter will report on the consumption of coal by the ORBES states and the distribution of coal produced in the eastern states and selected western states with wide market areas. The primary focus will be on coal produced for and consumed by electric utilities; a secondary focus will include coking coal for the steel industry.

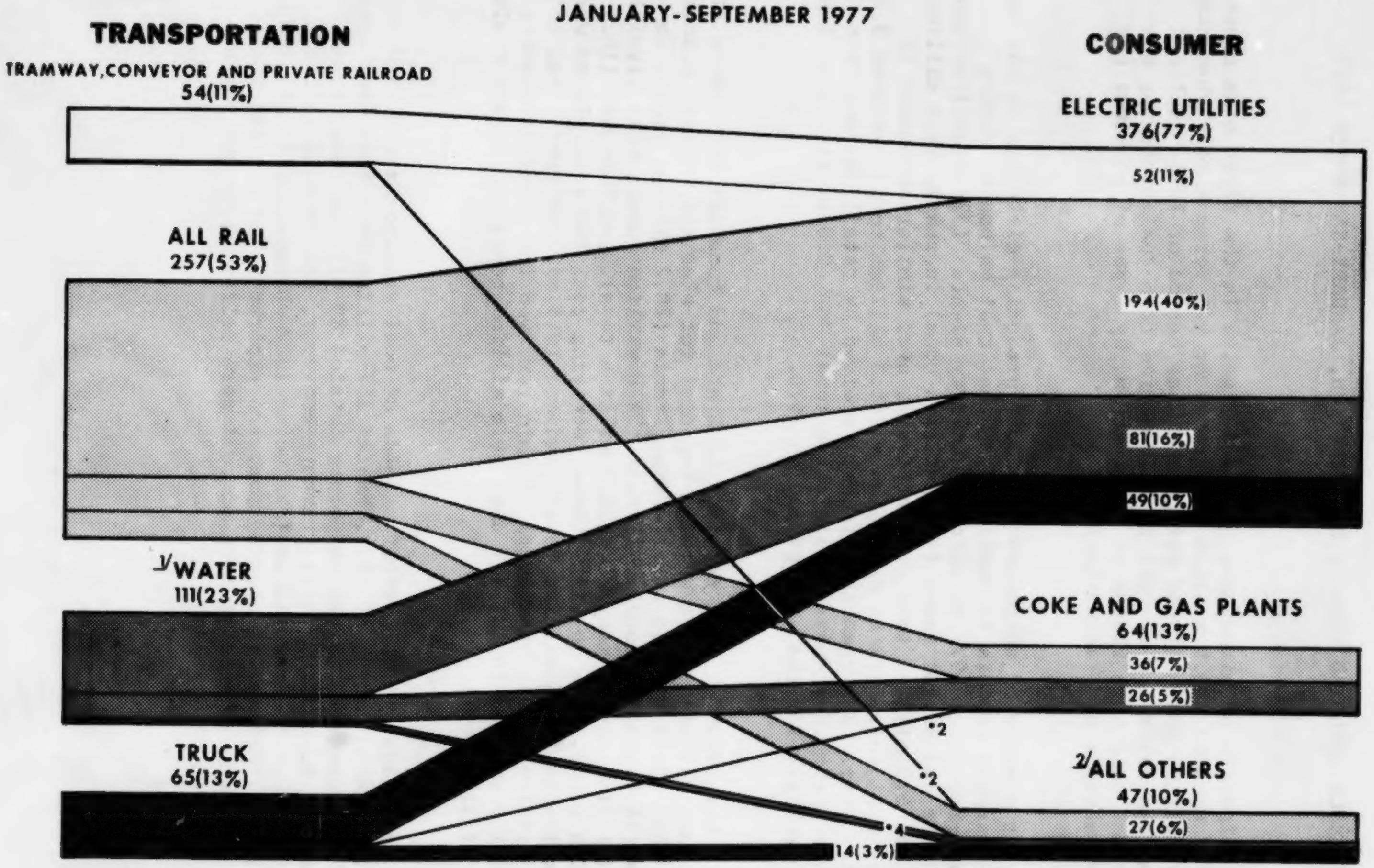
COAL CONSUMPTION IN THE ORBES STATES

The six ORBES states are the six leading consumers of coal by electric utilities in the U.S. Ohio led the nation in electric utility consumption of coal in 1976 (with some 50 million tons used), followed by Pennsylvania (37 million tons), Illinois (35 million tons), Indiana (29 million tons), West Virginia (28 million tons), and Kentucky (nearly 25 million tons). The three leading consumers of coking coal in 1976 were also ORBES states: Pennsylvania (23 million tons), Ohio (12.5 million tons), and Indiana (12.45 million tons). Ohio was also the largest consumer of coal for other industrial users and for retail dealers in 1976. Table 4-1 shows coal consumption by type of consumer in 1976 for each of the ORBES states.[2]

Tables 4-2 through 4-7 show the sources of coal consumed by electric utilities in each ORBES state. Each ORBES state produces within its borders at least 55 percent of the coal consumed by electric utilities.

COAL DISTRIBUTION BY TRANSPORTATION MODE AND END USE

MILLION SHORT TONS
JANUARY-SEPTEMBER 1977



* LESS THAN 1%
1/ INCLUDES SHIPMENTS PARTLY TRANSPORTED BY OTHER MODES;EXCLUDES OVERSEA EXPORTS
2/ INCLUDES RETAIL

Source: Dept. of Energy, Bituminous Coal and Lignite Distribution, January-September 1977, p. ii.

Figure 4-1

TABLE 4-1

AMOUNT OF BITUMINOUS COAL SHIPPED TO ORBES STATES BY CONSUMER USE, 1976

State	Electric Utilities	Coke & Gas Plants	Retail Dealers	All Others	Total
	(Thousand Net Tons)				
Illinois	35,011 (84.5%)	2,735 (6.6%)	537 (1.3%)	3,172 (7.6%)	41,455 (100%)
Indiana	29,239 (63.8)	12,450 (27.2)	363 (0.8)	3,785 (8.3)	45,837 (100%)
Kentucky	24,968 (91.4)	811 (2.9)	169 (0.6)	1,372 (5.0)	27,320 (100%)
Ohio	50,130 (70.6)	12,505 (17.6)	692 (1.0)	7,637 (10.8)	70,964 (100%)
Pennsylvania	37,249 (57.7)	23,281 (36.0)	192 (0.3)	3,870 (6.0)	64,592 (100%)
West Virginia	28,115 (77.0)	5,295 (14.5)	110 (0.3)	2,960 (8.1)	36,480 (100%)
Total ORBES States:	204,712	57,077	2,063	22,796	286,648
Total U.S.:	463,058	92,678	4,137	53,202	613,075
ORBES States as % of Total U.S.	(44.2%)	(61.6%)	(49.9%)	(42.8%)	(46.8%)

Source: U.S. Bureau of Mines, Bituminous Coal and Lignite Distribution, Calendar Year 1976, pp. 4, 11-12, 14, 27, 31.

TABLE 4-2

SOURCES OF COAL PURCHASED BY UTILITIES IN ILLINOIS 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% IL Utility Purchases	Tonnage	% IL Utility Purchases
To Illinois from:				
Illinois	18,315.6	57.51	21,436.5	61.62
Montana	6,172.9	19.38	8,855.5	25.45
Wyoming	3,673.4	11.54	1,506.3	4.33
Colorado	1,409.4	4.43	802.1	2.30
Kentucky (E)	1,073.2	3.37	587.9	1.85
Kentucky (W)	681.5	2.14	1,184.7	3.40
Indiana	485.3	1.52	347.9	1.00
Tennessee	27.0	0.08	1.4	0.004
Alabama	2.2	0.007	4.7	0.01
West Virginia (N)	1.5	0.005	--	--
West Virginia (S)	1.5	0.005	10.0	0.03
Totals:	31,843.6	99.987	34,791.0	99.99

TABLE 4-3

SOURCES OF COAL PURCHASED BY UTILITIES IN INDIANA 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% IN Utility Purchases	Tonnage	% IN Utility Purchases
To Indiana from:				
Indiana	19,282.8	58.20	18,915.8	62.06
Kentucky (W)	5,295.6	15.98	4,548.3	14.92
Illinois	3,676.3	11.10	3,073.3	10.08
Wyoming	2,580.3	7.79	1,965.0	6.45
Montana	1,315.0	3.97	1,264.0	4.15
Kentucky (E)	404.4	1.22	418.2	1.37
Colordao	256.6	0.77	10.0	0.03
Utah	126.6	0.38	30.8	0.10
West Virginia (S)	94.5	0.29	113.0	0.37
Ohio	54.9	0.16	14.7	0.05
Virginia	29.9	0.09	120.3	0.39
Tennessee	10.7	0.03	--	--
Pennsylvania	5.8	0.02	--	--
Totals:	33,133.5	100.00	30,478.4	99.99

Sources: Federal Power Commission/Federal Energy Regulatory Commission, Annual Summary of Cost and Quality of Electric Utility Plant Fuels, 1976, pp. 63-67; 1977, pp. 36-40.

TABLE 4-4

SOURCES OF COAL PURCHASED BY UTILITIES IN KENTUCKY 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% KY Utility Purchases	Tonnage	% KY Utility Purchases
To Kentucky from:				
Kentucky (W)	14,664.8	56.79	16,378.2	64.49
Kentucky (E)	7,739.8	29.97	5,707.9	22.47
Indiana	1,869.8	7.24	1,565.1	6.16
Illinois	1,000.9	3.88	1,471.5	5.79
Ohio	359.5	1.39	41.0	0.16
Tennessee	111.2	0.43	185.3	0.72
Wyoming	41.7	0.16	--	--
West Virginia (S)	34.7	0.13	--	--
Montana	--	--	41.9	0.16
West Virginia (N)	--	--	3.0	0.01
Totals:	25,822.4	99.99	25,393.9	99.96

TABLE 4-5

SOURCES OF COAL PURCHASED BY UTILITIES IN OHIO 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% OH Utility Purchases	Tonnage	% OH Utility Purchases
To Ohio from:				
Ohio	32,340.7	60.96	31,994.3	63.84
Kentucky (E)	7,405.4	13.96	6,305.0	12.58
Wyoming	3,620.7	6.82	2,010.7	4.01
West Virginia (N)	3,302.9	6.22	3,782.0	7.55
West Virginia (S)	1,844.1	3.47	1,587.5	3.17
Kentucky (W)	1,760.0	3.32	1.785.5	3.56
Pennsylvania (W)	1,748.2	3.29	1,005.8	2.01
Utah	812.7	1.53	863.4	1.72
Pennsylvania (E)	115.0	0.22	48.7	0.10
Virginia	36.5	0.07	407.1	0.81
Maryland	31.8	0.06	18.6	0.04
Indiana	21.2	0.04	16.6	0.03
Colorado	15.8	0.02	275.3	0.55
Tennessee	0.1	0.03	12.6	0.03
Totals:	53,055.3	100.01	50,113.1	100.00

Source: FPC/FERC, Annual Summary, 1976, pp. 63-67; 1977, pp. 36-40.

TABLE 4-6

SOURCES OF COAL PURCHASED BY UTILITIES IN PENNSYLVANIA 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% PA Utility Purchases	Tonnage	% PA Utility Purchases
To Pennsylvania from:				
Pennsylvania (E)	24,977.0	67.81	24,330.0	67.00
Pennsylvania (W)	5,426.9	14.73	5,979.3	16.47
West Virginia (N)	5,007.8	13.59	5,292.4	14.57
Ohio	1,206.6	3.28	437.8	1.21
Maryland	203.1	0.55	82.3	0.22
Kentucky (E)	14.4	0.04	186.4	0.51
West Virginia (S)	--	--	4.2	0.01
Totals:	36,835.8	100.00	36,312.4	99.99

TABLE 4-7

SOURCES OF COAL PURCHASED BY UTILITIES IN WEST VIRGINIA 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% WV Utility Purchases	Tonnage	% WV Utility Purchases
To West Virginia from:				
West Virginia (N)	14,332.0	50.27	13,441.6	47.80
West Virginia (S)	6,648.2	23.32	8,439.5	30.01
Kentucky (E)	4,143.3	14.53	3,970.1	14.12
Maryland	1,053.3	3.69	1,236.0	4.40
Ohio	1,078.8	3.78	107.2	0.38
Virginia	1,047.8	3.67	843.2	2.99
Pennsylvania (W)	200.6	0.70	--	--
Tennessee	4.3	0.02	82.7	0.29
Totals:	28,508.3	99.98	28,120.3	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 63-67; 1977, pp. 36-40.

Each ORBES state receives at least 80 percent of the coal consumed by its electric utilities from no more than three states, itself included. Coal from the western states of Montana, Wyoming, Colorado, and Utah has begun to move into the ORBES region, and provided 32 percent of the coal consumed by electric utilities in 1976 in Illinois, 11 percent in Indiana, and 6 percent in Ohio. In 1977, this figure rose to 35 percent in Illinois, 13 percent in Indiana, and 8 percent in Ohio. Table 4-1 is based on Bureau of Mines (BOM) figures; Tables 4-2 through 4-7 are based on Federal Energy Regulatory Commission (FERC) figures. The BOM electric utilities data are not exactly the same as the FERC data, but the differences are small.

DISTRIBUTION OF COAL PRODUCED IN THE EASTERN STATES

In 1975 the ORBES states were the six leading states in terms of tonnage of coal sold to electric utilities. In 1976, Wyoming and Montana displaced Indiana to move into the sixth and seventh places. In 1977 Wyoming moved ahead of Ohio, and the standings in terms of millions of tons delivered to electric utilities were: Kentucky (109.7), Illinois (45.6), Pennsylvania (45.5), West Virginia (44.2), Wyoming (42.2), Ohio (41.7), Montana (30.0), and Indiana (24.3).[3] Wyoming will probably be found to have moved into second place in 1978. By 1982, Wyoming will have moved into first place and Montana into third, behind Kentucky.

In terms of coal produced for coke, the ORBES states include four of the top six producers. The rankings for 1976 with millions of tons delivered to coke plants were: West Virginia (26.9), Pennsylvania (25.5), Kentucky (12.2), Alabama (5.9), Virginia (4.5), and Illinois (3.6). Indiana and Ohio sold no coal for coking purposes.[4]

Table 4-8 shows the distribution by consumer of coal produced in the eastern states. Because of the antiquated "Production District" reporting system used by the Bureau of Mines (derived from the Bituminous Coal Act of 1937, which expired in 1943), data on production by consumer use are not available by state. For example, District 8 combines eastern Kentucky, southern West Virginia, Virginia, and northern Tennessee; District 1 combines eastern Pennsylvania, Maryland, and northeast West Virginia; and District 7 combines southeastern West Virginia and several counties in Virginia. A map of production districts is presented in Figure 4-2; more detailed definitions appear in Table 4-9.

Nevertheless, the information in Table 4-8 is helpful in indicating the locations where substantial amounts of metallurgical or coking coal is produced. It is apparent that coal from the Eastern Interior Basin is used primarily by the electric utilities. Indiana and western Kentucky produce no coal consumed in coke and gas plants, and Illinois produced relatively little. Ohio, although located in the Appalachian Basin, also produces no coal suitable for coking, primarily because of the relatively high sulfur content of its coal. Districts 7 and 8 (southern West Virginia and eastern Kentucky) are the leading producers of coking coal, as is evident from the "Coke and Gas Plant" line plus their "Overseas Exports." (When Canada is excluded, nearly all the coal exported from the U.S. is used by the steel industry in Japan and Western Europe.) In fact, 43 percent of District 7's production in 1976 was for overseas export. District 2, or western Pennsylvania (an area which approximates the ORBES portion of Pennsylvania), is also a substantial producer of coking coal.

Data on production for use by electric utilities is available by state and district from the Federal Energy Regulatory Commission (FERC).[5] The markets for the coal consumed by electric utilities produced in the ORBES states in 1976 and 1977, broken down to indicate the differences between western and eastern Kentucky, western and eastern Pennsylvania, and northern and southern West Virginia, are detailed in Tables 4-10 through 4-18. There are minor discrepancies between the BOM figures and those of FERC.

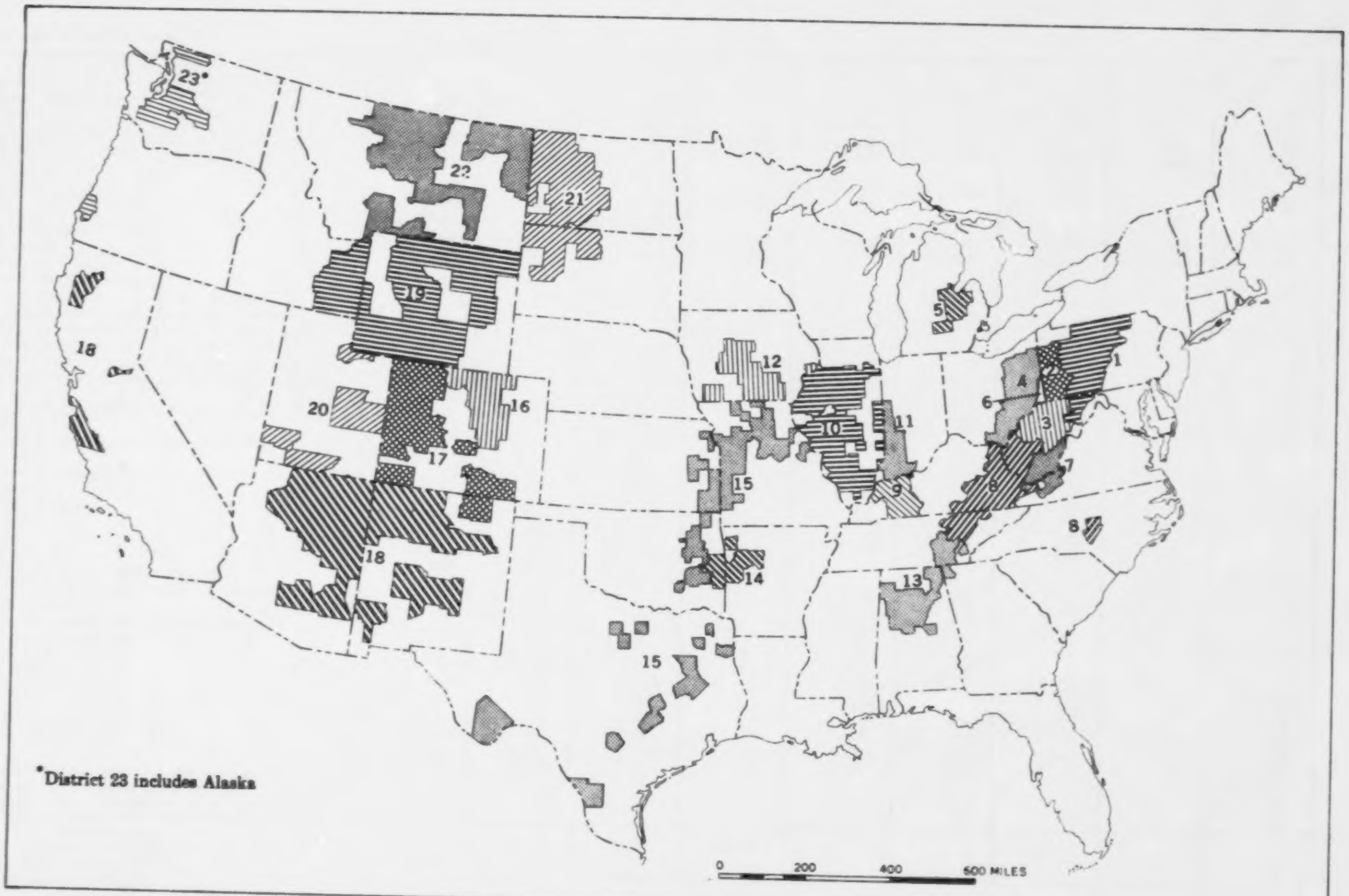
Most of the producing districts in the ORBES region serve relatively restricted market areas, with the exception of western Kentucky and especially eastern Kentucky. In 1976, Illinois consumed nearly 44 percent of its coal sold to utilities (40 percent in 1977), with the next 44 percent going to the neighboring states of Missouri, Wisconsin, Indiana, and Iowa. Indiana consumes nearly 80 percent of its coal sold to utilities, with the next 12 percent or so going to Kentucky and Georgia. Kentucky consumes some 30 percent of the production of western Kentucky, with Tennessee taking around 20 percent and Alabama and Indiana some 10 percent each. The Tennessee Valley Authority is the largest single purchaser of western Kentucky coal, consuming nearly half its annual production. Eastern Kentucky is the only region in an ORBES states from which the largest share of coal produced for utilities is not consumed within the state. North Carolina and Georgia took larger shares of eastern Kentucky coal sold to utilities in 1977 than did Kentucky. Eastern Kentucky clearly has the widest market area of any producing district within the ORBES region. Over 55 percent of eastern Kentucky's coal sold to utilities is consumed in the Southeast, with the next largest market in the Midwest. Ohio is an example of a restricted market area, as the state consumes nearly 80 percent of its own coal sold to utilities, with neighboring Michigan taking the next largest share. Similarly, Pennsylvania consumes about 70 percent of the coal shipped to utilities from eastern Pennsylvania, with neighboring New York and Maryland taking the next 20 percent. Pennsylvania also consumes over 60 percent of the coal shipped to utilities from western Pennsylvania, with neighboring Ohio taking the next 20 percent in 1977, sharply up from 12 percent in 1976. West Virginia consumes some 50 percent of the coal for utilities from its southern fields, with North Carolina and Ohio taking the next largest shares. West Virginia also consumes over 45 percent of the coal for utilities from its northern fields, with Pennsylvania, Michigan and Ohio taking the next 40 percent.

TABLE 4-8

DISTRIBUTION OF BITUMINOUS COAL PRODUCED IN EASTERN STATES BY CONSUMER USE, 1976
(In thousand net tons)

Producing District & States		Electric Utilities	Gas & Coke Plants	Retail Dealers	All Others	Overseas Exports (Excl. Canada)	Total Shipments
1:	Pennsylvania (E), Maryland, West Virginia (NE)	38,582	6,775	13	3,818	4,739	54,448
2:	Pennsylvania (W)	11,767	19,725	81	2,199	10	33,751
3 & 6:	West Virginia (N)	33,707	2,733	90	2,557	2,432	41,585
4:	Ohio	40,426	0	571	4,477	0	45,810
7:	West Virginia (SE), Virginia (S)	843	12,699	125	724	11,563	26,883
8:	Kentucky (E), Virginia (SW), West Virginia (SW), Tennessee (N)	83,571	36,843	2,059	17,048	20,737	160,686
9:	Kentucky (W)	50,075	0	16	1,439	7	52,101
10:	Illinois	48,930	3,572	460	5,570	0	58,526
11:	Indiana	22,392	0	222	3,074	0	25,609
13:	Alabama, Tennessee (SE), Georgia	13,745	4,730	14	1,715	3,002	23,309
	Total Eastern States:	344,038	87,077	3,651	42,621	42,490	522,708
	Total United States:	463,058	92,678	4,137	53,202	42,658	659,175
	Eastern States as % of U.S.:	(74.30%)	(93.96%)	(88.25%)	(80.11%)	(99.61%)	(79.30%)

Source: U.S. Bureau of Mines, Bituminous Coal and Lignite Distribution, Calendar Year 1976, pp. 4, 5.


23*
22
21
19
18
20
16
17
18
15
12
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4
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1
7
8
8
15
*District 23 includes Alaska
0
200
400
600 MILES

BITUMINOUS COAL PRODUCING DISTRICTS AS DEFINED IN THE BITUMINOUS COAL ACT OF 1937 AND AMENDMENTS

The districts were originally established to aid in formulating minimum prices of bituminous coal and lignite. Because much statistical information was compiled in terms of these districts, their use for statistical purposes has continued since the abandonment of that legislation in 1943.

Figure 4-2

TABLE 4-9

Definition of Bituminous Coal and Lignite Producing Districts

DISTRICT 1.—EASTERN PENNSYLVANIA

Pennsylvania

Armstrong County (part).—All mines east of Allegheny River, and those mines served by the Pittsburgh & Shawmut Railroad located on the west bank of the river.

Fayette County (part).—All mines located on and east of the line of Indian Creek Valley branch of the Baltimore & Ohio Railroad.

Indiana County (part).—All mines not served by the Saltsburg branch of the Pennsylvania Railroad.

Westmoreland County (part).—All mines served by the Pennsylvania Railroad from Torrance, east.

All mines in the following counties:

Bedford
Blair
Bradford
Cambria
Cameron
Centre
Clarion
Clearfield
Clinton
Elk
Forest
Fulton
Huntingdon
Jefferson
Lycoming
McKean
Mifflin
Potter
Somerset
Tioga

Maryland.—All mines in the State.

West Virginia.—All mines in the following counties:

Grant
Mineral
Tucker

DISTRICT 2.—WESTERN PENNSYLVANIA

Pennsylvania

Armstrong County (part).—All mines west of the Allegheny River except those mines served by the Pittsburgh & Shawmut Railroad.

Fayette County (part).—All mines except those on and east of the line of Indian Creek Valley branch of the Baltimore & Ohio Railroad.

Indiana County (part).—All mines served by the Saltsburg branch of the Pennsylvania Railroad.

Westmoreland County (part).—All mines except those served by the Pennsylvania Railroad from Torrance, east.

All mines in the following counties:

Allegheny
Beaver
Butler
Greene
Lawrence
Mercer
Venango
Washington

DISTRICT 3.—NORTHERN WEST VIRGINIA

West Virginia

Nicholas County (part).—All mines served by or north of the Baltimore & Ohio Railroad.

All mines in the following counties:

Barbour
Braxton
Calhoun
Doddridge
Gilmer
Harrison
Jackson
Lewis
Marion
Monongalia
Pleasants
Preston
Randolph
Ritchie
Roane
Taylor
Tyler
Upshur
Webster
Wetzel
Wirt
Wood

DISTRICT 4.—OHIO.—All mines in the State.

DISTRICT 5.—MICHIGAN.—All mines in the State.

DISTRICT 6.—PANHANDLE

West Virginia.—All mines in the following counties:

Brooke
Hancock
Marshall
Ohio

DISTRICT 7.—SOUTHERN NO. 1

West Virginia

Fayette County (part).—All mines east of Gauley River and all mines served by the Gauley River branch of the Chesapeake & Ohio Railroad and mines served by the Virginian Railway.

McDowell County (part).—All mines in that portion of the county served by the Dry Fork branch of the Norfolk & Western Railroad and east thereof.

Raleigh County (part).—All mines except those on the Coal River branch of the Chesapeake & Ohio Railroad and north thereof.

DISTRICT 7.—SOUTHERN NO. 1 (Continued)

Wyoming County (part).—All mines in that portion served by the Gilbert branch of the Virginian Railway lying east of the mouth of Skin Fork of Guyandot River and in that portion served by the main line and the Glen Rogers branch of the Virginian Railway.

All mines in the following counties:

Greenbrier
Mercer
Monroe
Pocahontas
Summers

Virginia

Buchanan County (part).—All mines in that portion of the county served by the Richlands-Jewell Ridge branch of the Norfolk & Western Railroad and in that portion on the headwaters of Dismal Creek east of Lynn Camp Creek (a tributary of Dismal Creek).

Tazewell County (part).—All mines in those portions of the county served by the Dry Fork branch to Cedar Bluff and from Bluestone Junction to Boissevain branch of the Norfolk & Western Railroad and Richlands-Jewell Ridge branch of the Norfolk & Western Railroad.

All mines in the following counties:

Montgomery
Pulaski
Wythe
Giles
Craig

DISTRICT 8.—SOUTHERN NO. 2

West Virginia

Fayette County (part).—All mines west of the Gauley River except mines served by the Gauley River branch of the Chesapeake & Ohio Railroad.

McDowell County (part).—All mines west of and not served by the Dry Fork branch of the Norfolk & Western Railroad.

Nicholas County (part).—All mines in that part of the county south of and not served by the Baltimore & Ohio Railroad.

Raleigh County (part).—All mines on the Coal River branch of the Chesapeake & Ohio Railroad and north thereof.

Wyoming County (part).—All mines in that portion served by the Gilbert branch of the Virginian Railway and lying west of the mouth of Skin Fork of Guyandot River.

All mines in the following counties:

Boone
Cabell
Clay
Kanawha
Lincoln
Logan
Mason
Mingo
Putnam
Wayne

Virginia

Buchanan County (part).—All mines in the county, except in that portion on the headwaters of Dismal Creek, east of Lynn Camp Creek (a tributary of Dismal Creek) and in that portion served by the Richlands-Jewell Ridge branch of the Norfolk & Western Railroad.

Tazewell County (part).—All mines in the county except in those portions served by the Dry Fork branch of the Norfolk & Western Railroad and branch from Bluestone Junction to Boissevain of Norfolk & Western Railroad and Richlands-Jewell Ridge branch of the Norfolk & Western Railroad.

All mines in the following counties:

Dickinson
Lee
Russell
Scott
Wise

Kentucky.—All mines in the following counties in eastern Kentucky:

Bell
Boyd
Breathitt
Carter
Clay
Elliott
Floyd
Greenup
Harlan
Jackson
Johnson
Knott
Knox
Laurel
Lawrence
Lee
Leslie
Letcher
McCreary
Magoffin
Martin
Morgan
Owsley
Perry
Pike
Rockcastle
Wayne
Whitley

Tennessee.—All mines in the following counties:

Anderson
Campbell
Claiborne
Cumberland
Fentress
Morgan
Overton
Roane
Scott

North Carolina.—All mines in the State.

DISTRICT 9.—WEST KENTUCKY

Kentucky.—All mines in the following counties in western Kentucky:

Butler
Christian
Crittenden
Daviess
Hancock
Henderson
Hopkins
Logan
McLean
Muhlenberg
Ohio
Simpson
Todd
Union
Warren
Webster

DISTRICT 10.—ILLINOIS.—All mines in the State.

DISTRICT 11.—INDIANA.—All mines in the State.

DISTRICT 12.—IOWA.—All mines in the State.

DISTRICT 13.—SOUTHEASTERN

Alabama.—All mines in the State.

Georgia.—All mines in the following counties:

Dade
Walker

Tennessee.—All mines in the following counties:

Bledsoe
Grundy
Hamilton
Marion
McMinn
Rhea
Sequatchie
Van Buren
Warren
White

DISTRICT 14.—ARKANSAS-OKLAHOMA

Arkansas.—All mines in the State.

Oklahoma.—All mines in the following counties:

Haskell
Le Flore
Sequoyah

DISTRICT 15.—SOUTHWESTERN

Kansas.—All mines in the State.

Texas.—All mines in the State.

Missouri.—All mines in the State.

Oklahoma.—All mines in the following counties:

Coal
Craig
Latimer
Muskogee
Okmulgee
Pittsburg
Rogers
Tulsa
Wagoner

DISTRICT 16.—NORTHERN COLORADO

All mines in the following counties:

Adams
Arapahoe
Boulder
Douglas
Elbert
El Paso
Jackson
Jefferson
Larimer
Weld

DISTRICT 17.—SOUTHERN COLORADO

Colorado.—All mines except those included in District 16.

New Mexico.—All mines except those included in District 1

DISTRICT 18.—NEW MEXICO

New Mexico.—All mines in the following counties:

Grant
Lincoln
McKinley
Rio Arriba
Sandoval
San Juan
San Miguel
Santa Fe
Socorro

Arizona.—All mines in the State.

California.—All mines in the State.

DISTRICT 19.—WYOMING

Wyoming.—All mines in the State.

Idaho.—All mines in the State.

DISTRICT 20.—UTAH.—All mines in the State.

DISTRICT 21.—NORTH DAKOTA-SOUTH DAKOTA.

All mines in North Dakota and South Dakota.

DISTRICT 22.—MONTANA.—All mines in the State.

DISTRICT 23.—WASHINGTON

Washington.—All mines in the State.
Oregon.—All mines in the State.
Alaska.—All mines in the State.

TABLE 4-10

UTILITY PURCHASES OF COAL PRODUCED IN ILLINOIS (DISTRICT 10) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% IL Sales to Utilities	Tonnage	% IL Sales to Utilities
Illinois to:				
Illinois	18,315.6	40.20	21,436.5	43.68
Missouri	12,890.6	28.29	12,518.6	25.51
Wisconsin	3,885.0	8.53	4,129.9	8.41
Indiana	3,676.3	8.07	3,073.3	6.26
Iowa	2,099.4	4.60	2,117.8	4.32
Minnesota	1,152.2	2.53	1,433.1	2.91
Florida	1,081.5	2.37	1,558.4	3.18
Kentucky	1,000.9	2.20	1,471.5	3.00
Mississippi	627.6	1.38	520.3	1.06
Michigan	563.1	1.24	365.8	0.75
Tennessee	267.5	0.59	454.7	0.92
Totals:	45,559.8	100.00	49,079.9	100.00

TABLE 4-11

UTILITY PURCHASES OF COAL PRODUCED IN INDIANA (DISTRICT 11) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% IN Sales to Utilities	Tonnage	% IN Sales to Utilities
Indiana to:				
Indiana	19,282.8	79.47	18,915.8	79.42
Kentucky	1,869.8	7.71	1,565.1	6.57
Georgia	1,256.1	5.18	1,163.9	4.89
Wisconsin	711.8	2.93	949.4	3.99
Tennessee	503.6	2.08	547.6	2.30
Illinois	485.3	2.00	347.9	1.46
Missouri	57.0	0.23	242.0	1.02
Florida	47.7	0.20	--	--
Ohio	21.2	0.09	16.6	0.06
Michigan	20.7	0.07	68.5	0.28
Iowa	9.1	0.04	--	--
North Carolina	--	--	0.1	0.0004
Totals:	24,265.1	100.00	23,816.9	99.99

Sources: Federal Power Commission/Federal Energy Regulatory Commission, Annual Summary of Cost and Quality of Electric Utility Plant Fuels, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-12

UTILITY PURCHASES OF COAL PRODUCED IN EASTERN KENTUCKY (PART OF DISTRICT 8), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% KY (E) Sales to Utilities	Tonnage	% KY (E) Sales to Utilities
Kentucky (E) to:				
North Carolina	10,496.1	17.05	8,770.2	16.63
Georgia	9,844.6	15.99	6,109.7	11.59
Kentucky	7,739.8	12.57	5,707.9	10.83
Ohio	7,405.4	12.03	6,305.0	11.96
South Carolina	6,197.6	10.06	4,566.5	8.66
Michigan	4,922.3	7.99	5,873.4	11.14
West Virginia	4,143.3	6.73	3,970.1	7.53
Tennessee	3,672.4	5.96	4,735.2	8.98
Virginia	1,968.8	3.20	2,267.0	4.30
Illinois	1,073.2	1.74	587.9	1.12
Alabama	1,014.9	1.65	894.3	1.70
Florida	931.4	1.51	555.3	1.05
New York	618.0	1.00	484.4	0.92
Mississippi	551.4	0.89	727.4	1.38
Indiana	404.4	0.66	418.2	0.79
Missouri	231.0	0.38	121.9	0.23
New Jersey	194.3	0.32	119.9	0.23
Wisconsin	150.0	0.24	308.3	0.58
Pennsylvania	14.4	0.02	186.4	0.35
Minnesota	4.2	0.006	--	--
Maryland	--	--	13.0	0.02
Totals:	61,577.6	99.99	52,722.9	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-13

UTILITY PURCHASES OF COAL PRODUCED IN WESTERN KENTUCKY (DISTRICT 9) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% KY (W) Sales to Utilities	Tonnage	% KY (W) Sales to Utilities
Kentucky (W) to:				
Kentucky	14,664.8	30.45	16,378.2	33.10
Tennessee	10,652.9	22.12	9,139.1	18.47
Indiana	5,295.6	11.00	4,585.3	9.27
Alabama	4,321.2	8.97	5,919.7	11.96
Georgia	3,626.9	7.53	3,708.1	7.49
Florida	3,578.9	7.43	3,090.0	6.25
Wisconsin	2,029.4	4.21	1,676.1	3.39
Ohio	1,760.0	3.65	1,785.5	3.61
Michigan	965.9	2.01	1,227.5	2.48
Illinois	681.5	1.42	1,184.7	2.39
Missouri	305.0	0.63	413.0	0.83
Iowa	207.5	0.43	82.8	0.17
Mississippi	54.0	0.11	152.2	0.31
Minnesota	14.4	0.03	129.2	0.26
North Carolina	--	--	5.8	0.01
Totals:	48,158.1	99.99	49,477.2	99.99

TABLE 4-14

UTILITY PURCHASES OF COAL PRODUCED IN OHIO (DISTRICT 4) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% OH Sales to Utilities	Tonnage	% OH Sales to Utilities
Ohio to:				
Ohio	32,340.7	77.64	31,994.3	79.71
Michigan	5,965.3	14.32	6,982.9	17.40
Pennsylvania	1,206.6	2.90	437.8	1.09
West Virginia	1,078.8	2.58	107.2	0.27
Tennessee	538.4	1.29	481.0	1.20
Kentucky	359.5	0.86	41.0	0.10
Alabama	64.0	0.15	--	--
Indiana	54.9	0.13	14.7	0.03
Wisconsin	37.3	0.09	68.1	0.17
Minnesota	8.5	0.02	7.7	0.02
North Carolina	0.7	0.001	--	--
Totals:	41,654.9	99.98	40,134.7	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-15

UTILITY PURCHASES OF COAL PRODUCED IN EASTERN PENNSYLVANIA (PART OF DISTRICT 1), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% PA (E) Sales to Utilities	Tonnage	% PA (E) Sales to Utilities
Pennsylvania (E) to:				
Pennsylvania	24,977.0	69.77	24,330.0	74.04
New York	4,600.7	12.85	3,904.0	11.88
Maryland	3,266.7	9.01	2,610.7	7.94
Michigan	1,209.0	3.38	455.0	1.38
Delaware	704.0	1.97	--	--
New Jersey	574.6	1.61	419.4	1.28
Wisconsin	370.3	1.03	326.8	0.99
Ohio	115.0	0.32	48.7	0.15
Vermont	19.3	0.05	--	--
Virginia	1.0	0.002	--	--
Connecticut	--	--	765.0	2.33
Totals:	35,797.5	99.99	32,859.7	99.99

TABLE 4-16

UTILITY PURCHASES OF COAL PRODUCED IN WESTERN PENNSYLVANIA (DISTRICT 2) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% PA (W) Sales to Utilities	Tonnage	% PA (W) Sales to Utilities
Pennsylvania (W) to:				
Pennsylvania	5,426.9	63.32	5,979.3	73.99
Ohio	1,748.2	20.40	1,005.8	12.45
New York	656.6	7.66	470.4	5.82
West Virginia	200.6	2.34	82.7	1.02
Wisconsin	199.6	2.33	278.9	3.45
Maryland	184.0	2.15	80.1	0.99
Missouri	114.0	1.33	--	--
Michigan	21.0	0.25	146.9	1.82
Tennessee	12.1	0.14	--	--
Indiana	5.8	0.07	--	--
New Jersey	1.0	0.01	23.2	0.29
Vermont	0.7	0.00	--	--
New Hampshire	0.2	0.00	13.2	0.16
Totals:	8,570.7	100.00	8,080.5	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-17

UTILITY PURCHASES OF COAL PRODUCED IN SOUTHERN WEST VIRGINIA (PART OF DISTRICTS 7 & 8), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% WV (S) Sales to Utilities	Tonnage	% WV (S) Sales to Utilities
West Virginia (S) to:				
West Virginia	6,648.2	50.05	8,439.5	48.07
North Carolina	3,125.5	23.53	2,908.6	16.56
Ohio	1,844.1	13.88	1,587.5	9.04
Michigan	882.4	6.64	3,829.0	21.80
Virginia	533.9	4.02	662.8	3.77
Indiana	94.5	0.71	113.0	0.64
South Carolina	56.3	0.42	3.2	0.02
Missouri	42.0	0.32	--	--
Kentucky	34.7	0.26	--	--
Wisconsin	18.9	0.14	--	--
Illinois	1.5	0.01	--	--
Minnesota	0.3	0.002	10.0	0.06
Maryland	0.1	0.0007	--	--
Pennsylvania	--	--	4.2	0.02
Totals:	13,282.5	99.98	17,557.8	99.98

TABLE 4-18

UTILITY PURCHASES OF COAL PRODUCED IN NORTHERN WEST VIRGINIA (PART OF DISTRICTS 1, 3 & 6), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% WV (N) Sales to Utilities	Tonnage	% WV (N) Sales to Utilities
West Virginia (N) to:				
West Virginia	14,332.0	46.41	13,441.6	49.82
Pennsylvania	5,007.8	16.22	5,292.4	19.61
Michigan	4,140.2	13.41	605.5	2.24
Ohio	3,302.9	10.69	3,782.0	14.02
New Jersey	1,460.0	4.73	1,452.1	5.38
New Hampshire	959.9	3.11	740.0	2.74
Maryland	897.0	2.90	770.0	2.85
New York	528.6	1.71	863.4	3.20
Virginia	229.0	0.74	2.8	0.01
Wisconsin	17.2	0.06	21.5	0.08
Missouri	7.0	0.02	--	--
Illinois	1.5	0.00	--	--
Minnesota	0.5	0.00	0.9	0.003
Indiana	--	--	5.0	0.02
Kentucky	--	--	3.0	0.01
South Carolina	--	--	0.5	0.002
Totals:	30,883.6	100.00	26,980.7	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

Eastern coal producing states not in the ORBES region include Alabama, Georgia, Maryland, Tennessee and Virginia. As mentioned agove, Alabama and Virginia are significant producers of metallurgical grade coal, with 5.9 and 4.5 million tons of coal, respectively, sold for coke production in 1976. Tennessee and Maryland are very minor coking coal producers, with 33 and 11 thousand tons respectively in 1976. Georgia's entire production of 185 thousand tons is believed to be sold for metallurgical use, but Georgia is not listed separately as a coking coal producing state; its production is probably combined with Alabama's.

The distribution of coal sold to utilities from these states is shown in Tables 4-19 through 4-22. Alabama consumed nearly 90 percent of its coal sold to utilities in 1977, with Georgia, Florida and Mississippi taking almost all the remainder. West Virginia is the leading consumer of coal sold to utilities from Maryland, with Maryland a significant second and Pennsylvania third. Tennessee coal is sold to utilities in a wider area in the Southeast; Tennessee is its own leading customer, followed by Georgia, North and South Carolina, and Alabama. North Carolina takes over half of Virginia's steam coal, with Virginia its own second best customer, followed by West Virginia, Georgia, South Carolina, New Jersey, and Tennessee.

DISTRIBUTION OF COAL PRODUCED IN THE WESTERN STATES

Since 1970 the coal producing states west of the Mississippi River have become increasingly important suppliers of coal to the electric utility industry. The contribution of the western states to the total domestic coal consumed by electric utilities has risen from 16 percent in 1973 to nearly 29 percent in 1977. Wyoming and Montana have become leading suppliers of electric utilities through a rapidly expanding surface-mined production of sub-bituminous coal. Texas and North Dakota have expanded their production of lignite. In 1976, 87 percent of coal produced in the western states was sold to electric utilities. Table 4-23 shows the distribution of bituminous coal and lignite produced in the western states by consumer use in 1976.

Although only four percent of the western coal produced in 1976 was used for coke, certain states are important suppliers of metallurgical coal to the steel industry in the western states. Colorado with 2.6 million tons, Utah with 1.6 million tons, and New Mexico with .8 million tons were the leading western suppliers of coking coal in 1976. Oklahoma with 441 thousand tons and Arkansas with 189 thousand tons in 1976 also figure in coking coal production.

With the exceptions of Wyoming, Montana, Colorado, and Utah, the western states serve only limited electric utility market areas. Iowa's

TABLE 4-19

UTILITY PURCHASES OF COAL PRODUCED IN ALABAMA AND GEORGIA (DISTRICT 13), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% AL & GA Sales to Utilities	Tonnage	% AL & GA Sales to Utilities
Alabama & Georgia to:				
Alabama	12,513.8	89.34	11,264.3	80.81
Georgia	882.0	6.30	1,809.6	12.98
Florida	324.2	2.31	679.3	4.87
Mississippi	279.0	2.00	176.9	1.27
South Carolina	4.8	0.03	--	--
Illinois	2.2	0.02	4.7	0.03
Tennessee	0.2	0.00	4.8	0.03
Totals:	14,006.2	100.00	13,939.6	99.99

TABLE 4-20

UTILITY PURCHASES OF COAL PRODUCED IN MARYLAND (DISTRICT 1) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% MD Sales to Utilities	Tonnage	% MD Sales to Utilities
Maryland to:				
West Virginia	1,053.3	47.79	1,236.0	51.24
Maryland	848.5	38.50	1,071.0	44.40
Pennsylvania	203.1	9.21	82.3	3.41
Ohio	31.8	1.44	18.6	0.77
New York	30.4	1.38	4.3	0.18
Michigan	28.0	1.27	--	--
Virginia	9.0	0.41	--	--
Totals:	2,204.1	100.00	2,412.2	100.00

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-21

UTILITY PURCHASES OF COAL PRODUCED IN TENNESSEE (PART OF DISTRICTS 8 & 13), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% TN Sales to Utilities	Tonnage	% TN Sales to Utilities
Tennessee to:				
Tennessee	4,286.6	53.00	4,827.3	66.82
Georgia	1,767.0	21.85	1,336.6	18.50
North Carolina	1,175.4	14.53	669.7	9.27
South Carolina	368.1	4.55	102.9	1.42
Alabama	304.7	3.77	15.8	0.22
Kentucky (E)	111.2	1.37	185.3	2.56
Illinois	27.0	0.33	1.4	0.02
Minnesota	26.8	0.33	18.9	0.26
Indiana	10.7	0.13	--	--
West Virginia	4.3	0.05	--	--
Missouri	4.0	0.05	--	--
Virginia	2.0	0.02	48.0	0.66
Ohio	0.1	0.001	12.6	0.17
Maryland	--	--	6.0	0.08
Totals:	8,087.8	99.98	7,224.5	99.98

TABLE 4-22

UTILITY PURCHASE OF COAL PRODUCED IN VIRGINIA (PART OF DISTRICTS 7 & 8), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% VA Sales to Utilities	Tonnage	% VA Sales to Utilities
Virginia to:				
North Carolina	7,058.4	51.35	7,233.1	53.02
Virginia	2,773.0	20.17	2,328.3	17.07
West Virginia	1,047.8	7.62	843.2	6.18
Georgia	716.6	5.21	474.7	3.48
South Carolina	669.2	4.87	821.6	6.02
New Jersey	467.4	3.40	518.0	3.80
Tennessee	452.4	3.29	842.6	6.18
Missouri	442.0	3.22	--	--
Michigan	52.4	0.38	43.5	0.32
Ohio	36.6	0.27	407.1	2.98
Indiana	29.9	0.22	120.3	0.88
Maryland	--	--	10.0	0.07
Totals:	13,745.6	100.00	13,642.4	100.00

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

high-sulfur bituminous coal is consumed entirely within the state, as is Texas' low btu lignite. North Dakota's lignite is consumed in the Dakotas and Minnesota. Production of relatively high sulfur coal in Oklahoma, Kansas and Missouri reaches only a limited regional market in surrounding states. Arizona's coal is consumed entirely in Arizona and Nevada, and New Mexico's steam coal is consumed entirely in New Mexico and Arizona. Washington's coal production is consumed entirely within the state.

It is only coal from Wyoming, Montana, Colorado and Utah that has any significant potential for entering the midwestern and eastern utility markets traditionally served by the eastern coal producing states. The distribution of the coal sold to utilities from these states in 1976 and 1977 is shown in Tables 4-24 through 4-28. Montana supplies more steam coal to Minnesota and Illinois than it consumes within its own borders, and is also a significant supplier to Wisconsin, Michigan and Indiana. Wyoming is its own leading consumer, and also supplies a number of midwestern and plains states, including Illinois, Ohio and Indiana in significant quantities. Utah coal has been supplied to Ohio and Indiana in modest amounts, while Colorado coal has been supplied to Illinois in significant amounts and to Ohio and Indiana in lesser amounts.

WESTERN COAL IN THE EASTERN MARKETS

Data in Tables 4-24 through 4-28 show that approximately 20 million tons of coal were shipped to utilities in Illinois, Indiana, and Ohio in 1978 from mines in Wyoming, Montana, Colorado, and Utah. Illinois is the leading consumer of western coal with 11.2 million tons, followed by Ohio with 4.4 million tons and Indiana with 4.3 million tons in 1978. Information on coal contracts obtained by the Montana University Coal Demand Study shows that the Indiana & Michigan Electric Company has contracted to receive from 7 to 10 million tons per year for 25 years from Amax Coal's Belle Ayr North mine near Gillette, Wyoming and 5 million tons per year for 30 years from Carter Mining's North Rawhide mine also near Gillette.[6] As these deliveries were just beginning in 1978, it is likely that Indiana's purchases of Wyoming coal will increase by another 10 million tons per year. Current indications are that western coal will not make further substantial inroads east of the Mississippi except for Illinois. Two factors make expansion of western coal sales in the ORBES states (other than Illinois) unlikely: the Environmental Protection Agency's "new source performance standards" issued under the Clean Air Act amendments of 1977, and increasing transportation costs for moving western coal to the eastern states.

The Clean Air Act amendments require new coal-fired power plants to use the "best available technology" to clean smokestack emissions, a requirement interpreted to mean installation of flue gas desulfurization

TABLE 4-23

DISTRIBUTION OF BITUMINOUS COAL AND LIGNITE PRODUCED IN WESTERN STATES BY CONSUMER USE, 1976

(In thousand net tons)

Producing District & States		Electric Utilities	Gas & Coke Plants	Retail Dealers	All Others	Overseas Exports (Excl. Canada)	Total Shipments
12:	Iowa	538	0	0	2	0	540
14:	Arkansas, Oklahoma (SE)	21	542	0	169	168	894
15:	Kansas, Missouri, Oklahoma (NE), Texas	20,870	176	9	2,967	0	24,063
16:	Colorado (N)	66	0	0	261	0	327
17:	Colorado (S), New Mexico (E)	5,936	3,430	31	590	0	10,039
18:	Arizona, New Mexico (W)	18,756	0	0	433	0	19,105
19:	Wyoming	28,282	--	109	2,761	0	31,174
20:	Utah	3,915	1,453	243	1,785	0	7,999
21:	North Dakota	10,257	--	86	748	0	11,233
22 & 23:	Montana Washington, Alaska	30,379	0	8	865	0	31,093
	Total Western States:	119,020	5,601	486	10,581	168	136,467
	Total United States:	463,058	92,678	4,137	53,202	42,658	659,175
	Western States as % of U.S.:	(25.70%)	(6.04%)	(11.75%)	(19.89%)	(0.39%)	(20.70%)

Source: U.S. Bureau of Mines, Bituminous Coal and Lignite Distribution, Calendar Year 1976, p. 5.

TABLE 4-24

UTILITY PURCHASES OF COAL PRODUCED IN MONTANA (DISTRICT 22) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% MT Sales to Utilities	Tonnage	% MT Sales to Utilities
Montana to:				
Minnesota	9,929.2	38.26	8,161.6	32.70
Illinois	6,172.9	23.78	8,855.5	35.48
Montana	3,223.4	12.42	2,316.0	9.28
Wisconsin	2,592.1	9.99	2,419.9	9.70
Michigan	2,549.0	9.82	1,710.0	6.85
Indiana	1,315.0	5.07	1,264.0	5.06
Iowa	160.1	0.62	189.5	0.76
South Dakota	12.0	0.04	--	--
Kentucky	--	--	41.9	0.17
Totals:	25,953.7	100.00	24,958.4	100.00

TABLE 4-25

UTILITY PURCHASES OF COAL PRODUCED IN WYOMING (DISTRICT 19) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% WY Sales to Utilities	Tonnage	% WY Sales to Utilities
Wyoming to:				
Wyoming	11,281.2	26.74	7,711.4	29.91
Texas	4,939.7	11.71	903.9	3.51
Iowa	4,056.6	9.61	3,132.9	12.15
Illinois	3,673.4	8.71	1,560.3	6.05
Ohio	3,620.7	8.58	2,010.7	7.80
Kansas	3,333.3	7.90	1,172.5	4.55
Colorado	3,140.2	7.44	2,960.1	11.48
Indiana	2,580.3	6.12	1,965.9	7.63
Oklahoma	1,919.6	4.55	598.8	2.32
Nebraska	1,764.0	4.18	1,623.4	6.29
Missouri	841.7	1.99	977.3	3.79
Wisconsin	703.0	1.67	970.0	3.76
South Dakota	211.2	0.50	192.3	0.75
Alabama	43.2	0.10	--	--
Kentucky	41.7	0.09	--	--
Tennessee	41.3	0.09	--	--
Minnesota	--	--	1.8	0.006
Totals:	42,191.0	99.98	25,781.3	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-26

UTILITY PURCHASES OF COAL PRODUCED IN UTAH (DISTRICT 20) 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% UT Sales to Utilities	Tonnage	% UT Sales to Utilities
Utah to:				
Utah	2,419.0	48.22	1,869.0	40.35
Nevada	828.4	16.51	820.5	17.71
Ohio	812.7	16.20	863.4	18.64
Arizona	538.2	10.73	234.9	5.07
Nebraska	160.2	3.19	4.3	0.09
Missouri	132.0	2.63	--	--
Indiana	126.6	2.52	30.8	0.66
Wyoming	--	--	748.0	16.15
Minnesota	--	--	61.5	1.33
Totals:	5,017.1	100.00	4,632.4	100.00

TABLE 4-27

UTILITY PURCHASES OF COAL PRODUCED IN NORTHERN COLORADO (DISTRICT 16), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% CO (N) Sales to Utilities	Tonnage	% CO (N) Sales to Utilities
Colorado (N) to:				
Illinois	1,323.4	71.06	718.5	48.33
Iowa	261.0	14.01	230.8	15.52
Nebraska	160.6	8.62	196.0	13.18
Arizona	64.1	3.44	--	--
Colorado	37.6	2.02	54.3	3.65
Ohio	15.8	0.85	275.3	18.52
Indiana	--	--	10.0	0.67
Missouri	--	--	1.8	0.12
Totals:	1,862.5	100.00	1,486.7	99.99

Source: FPC/FERC, Annual Summary, 1976, pp. 57-63; 1977, pp. 30-34.

TABLE 4-28

UTILITY PURCHASES OF COAL PRODUCED IN SOUTHERN COLORADO (DISTRICT 17), 1976 AND 1977 (In thousand tons)

	1977		1976	
	Tonnage	% CO (S) Sales to Utilities	Tonnage	% CO (S) Sales to Utilities
Colorado (S) to:				
Colorado	5,137.5	90.64	4,074.5	97.62
Indiana	256.6	4.53	--	--
Arizona	93.0	1.64	--	--
Illinois	86.0	1.52	83.6	2.00
Nebraska	68.3	1.21	15.9	0.38
Iowa	26.5	0.47	--	--
Totals:	5,667.9	100.01	4,174.0	100.00

systems, popularly known as "scrubbers." The proposed EPA regulations would require power plants to reduce sulfur dioxide emissions by 90 percent on high and medium sulfur coal and only 70 percent on low sulfur coal. This requirement would obviously give higher sulfur midwestern coal an advantage for new power plants in the ORBES states, and reduce the cost-saving benefits that utilities would have gained from burning low sulfur (but low Btu) coal from the Northern Great Plains without scrubbers. Although the dominant influence on the demand for western coal in eastern states will undoubtedly be the EPA new source performance standards, increasing costs of transporting western coal will also play a role in limiting its market area. Rapid escalation of unit train tariffs have disturbed utilities, and have increased interest in coal slurry pipelines. Slurry pipelines face their own problems of obtaining rights-of-way from the railroads and rights to use large amounts of water.[7]

Illinois may remain on the border of the market area for Northern Great Plains sub-bituminous coal, even under the proposed EPA regulations. If so, this could pose a threat to the sales to Illinois utilities of high sulfur coal mined in Illinois and Indiana. Although western coal is unlikely to penetrate further east than Illinois, coal from the Northern Great Plains and the Southwestern Rocky Mountains states will likely remain competitive in midwest states west of the Mississippi River and in the Gulf states. This may have the effect of restricting the growth of markets for eastern coal in these areas. Eastern coal may preserve much of its traditional market area, but find that it is excluded from markets west of the Mississippi. This assumption would project a relative stability for eastern coal production rather than any rapid expansion or decline.

REFERENCES

[1] *Annual Summary of Cost and Quality of Electric Utility Plant Fuels, 1977*, Staff Report by the Office of Electric Power Regulation, Federal Energy Regulatory Commission, U.S. Department of Energy (September 1978), p. ii. This report was issued by the Bureau of Power of the superceded Federal Power Commission for 1973 and 1974 (June 1975), 1975 (May 1976), and 1976 (May 1977).

[2] U.S. Bureau of Mines, *Bituminous Coal and Lignite Distribution, Calendar Year 1976*. This publication is now issued by the Energy Information Administration of the U.S. Department of Energy in the Energy Data Report Series. The mandatory reporting requirement for this report was extended from firms shipping in excess of 100,000 tons to firms shipping in excess of 50,000 tons beginning in October 1977. Since figures collected during the year were not completely compatible, no summary report for 1977 was issued; see the October-December 1977 quarterly report, p. 1.

[3] *Annual Summary 1977*, pp. xxvi-xxvii.

[4] *Coke and Coal Chemicals in 1976*, Energy Data Reports, Energy Information Administration, U.S. Department of Energy, p. 25.

[5] In addition to the *Annual Summary*, the Office of Electric Power Regulation of the FERC also publishes an annual report, *Status of Coal Supply Contracts for New Electric Generating Units*. The first of these reports covering the period 1976-1985 was published by the superceded FPC (January 1977); the first annual supplement covering 1977-1986 is available from FERC (May 1978). The Division of Power Supply and Reliability of FERC publishes a series of useful reports based on the "long-range coordinated planning reports" of the regional electric reliability councils: *Electric Power Supply and Demand 1978-1987 for the Contiguous United States* (July 1978), *Additions to Generating Capacity 1978-1987 for the Contiguous United States* (October 1978), and *Bulk Electric Power Load and Supply Projections 1988-1997 Contiguous United States* (December 1978). Certain information from these and other sources are summarized in the National Coal Association's annual *Steam Electric Plant Factors*.

[6] William Tomlinson, "Northern Great Plains Coal Contract Data," Montana University Coal Demand Study Working Paper #4 (October 1975), pp. 7, 9; see also the Study's *Projections of Northern Great Plains Coal Mining and Energy Conversion Development, 1975-2000 A.D.*, *Summary Volume* and *Final Report* (May 1976).

[7] See Arthur W. Edwards Associates, "An Analysis of Institutional Factors Affecting Western Coal Production, 1975-1985," a report submitted to the Appalachian Regional Commission, 23 September 1977.

CHAPTER V

OWNERSHIP STRUCTURE OF THE COAL INDUSTRY

The production of coal in the United States is conducted by private corporations, in contrast to the public enterprises which control and manage the coal industries of many other countries. The structure of ownership of coal companies thus becomes an important factor in the conduct and performance of the coal industry in the United States. As the production of coal is governed by the operation of a market economy, competition and concentration among the buyers and sellers of coal become important subjects for study by those concerned with the behavior of the industry.

OLIGOPOLY AND COMPETITIVE SECTORS

There is growing interest among economists in a two-sector model of the private economy in the contemporary United States. The idea of a dual private economy is developed by Robert Averitt, who designates a "center economy" and a "periphery economy" differentiated by a number of features. "The defining quality of periphery firms is settled by small size and limited potential. Conversely, the center economy is composed of firms combining large size and unlimited potential."[1] Firms in the periphery economy are often dominated by a family or single individual; firms in the center economy are corporate and bureaucratic. Periphery firms often produce only a single product for a local or regional market; center firms produce diversified products for national and international markets. Financial support from internal and external sources presents little problem for center firms, while periphery firms are often pushed into retrenchment or bankruptcy by financial crises. The long-run perspective of the center firm has a stabilizing effect on the economy as a whole, but the short-run outlook of the periphery firm contributes to the aggravation of business cycles. Labor relations in the center economy tend toward national collective bargaining with uniform wage scales; some industries within the periphery economy are unionized and bargain regionally, but many are unorganized.

Reed Moyer has appropriately characterized the structure of the Midwestern coal industry (Illinois, Indiana and western Kentucky) as "oligopoly with a competitive fringe."[2] This analysis of the coal industry as divided into oligopoly and competitive sectors parallels Averitt's discussion of the dual private economy. The notion of a segmented coal industry is a commonplace among participants in and observers of the coal industry, although the vocabulary in common usage is not that of oligopoly and competitive sectors or center and periphery firms. Typical discussions distinguish between national and independent coal companies. "Captives" are, by definition, integrated into firms in the national or center economy. Most coal companies in the oligopoly sector of the industry are large in size, bureaucratic in management, often owned by a larger oil, mineral, steel or utility company that deals in multi-state, national or even international markets, and that operate under a contract with a labor union (most often the UMWA). Companies in the competitive sector of the coal industry tend to be closely held, identified with one or a few families, entrepreneurial in management style, locally oriented, and non-union. This classification scheme is not completely tidy, nor is it always in conformity with everyday usage. A few major coal companies, Pittston for example, like to speak of themselves as "independents," meaning that they are not owned by other corporations. Yet Pittston must be considered to be in the oligopoly sector by virture of its size, multi-state operations, and publicly traded and widely held stock.

The question of the segmentation of the coal industry into oligopoly and competitive sectors is analytically distinct from the question of competition and concentration in the industry. The existence of two distinct sectors in the industry is not dependent on their relative market strength. As long as there have been coal companies owned by steel corporations, there have been coal companies integrated into the center economy or oligopoly sector. Prior to the 1950s, however, coal companies in the oligopoly sector did not account for a substantial proportion of coal production. Since 1960, the oligopoly sector has become the dominant component of the coal industry. In 1976, the 60 or so coal companies in the oligopoly sector accounted for over 65 percent of national coal production. The competitive sector, composed of some 3,400 companies producing over 30 percent of national coal production, continues to be an important part of the industry, particularly in the Appalachian states. The issues of competition and concentration are thus of major importance in assessing the structure of the coal industry.

COMPETITION AND CONCENTRATION

A market characterized by unrestricted competition requires many sellers, selling a uniform product, with easy entry by new competitive firms. Whether the coal industry is, or has ever been, in that situation of a competitive market is a matter of considerable debate. The trend of this discussion is apparent in the various essays on the bituminous coal industry in the successive editions of a reader, The Structure of American Industry, edited by Walter Adams. In the first edition in 1950, Norman Leonard argues that, on the three criteria listed above, the bituminous coal industry fits the competitive pattern, even going beyond the ideal to the point of destructive competition. He argues that there are some 6,000 competing sellers, with no firm as of 1946 controlling more than three percent of the national output; that although coal is of varying quality, coal values can be translated into a cost per million Btu's; and that the lack of patent restrictions and the wide diffusion of coal geographically and by ownership facilitates entry of new firms.[3] In the 1954 revised edition, Jacob Schmookler's article on bituminous coal argues that the notion that the industry is or ever was purely competitive is unsound. While granting the ease of entry argument, he disputes the assumptions that coal is a uniform product and that all the firms producing coal compete in a national market.[4]

The first point of product differentiation has some validity; coal varies by rank and grade according to sulfur, ash, moisture, fixed carbon, volatile matter and heat content. Coal has also been sold in various sizes: block, lump, egg, stoker, etc. In the 1920s and 1930s coal producers went to considerable lengths to convince buyers of their differentiated products. But there is little evidence that such differences, apart from the degree of reliability of the supplier, have a significant impact in the fact of disparities of price. The argument for product differentiation appears to have less validity now than it once may have had. The market appears to recognize only two major types of coal: metallurgical or coking coal, and steam coal used by the electric utilities and other industrial consumers. In the steam category, the only major distinction is between high and low sulfur coal. Utilities can and do pay for coal on a Btu basis.

With new regulations concerning permissable equipment, health and safety standards, and reclamation requirements, entry into the industry is probably not as easy as it once was. For large underground and surface mines, capital requirements are substantial.[5] In most of the West, large mines are likely to be the only kind feasible. Not only is large-scale mining essential for lower grades of coal, but coal lands are available mostly in substantial blocks of private, federal or Indian lands. In the Appalachian coalfields, where coal land ownership is more dispersed, small scale operations are likely to continue with relative ease of entry. In the midwestern fields, the situation is tending toward the elimination of small operators.

The least viable assumption in the competitive argument is the notion that all coal producers compete in a national market in which none controls a significant share of the output. Since coal deposits are widely dispersed geographically, as are the buyers and users of coal, transportation costs have a great influence over which producers are in the range of which buyers. Instead of one national market, data on the actual distribution of coal show there are a number of distinct regional market areas. Walter Voskuil in a 1942 study identified five major marketing areas in the eastern United States: The New England market, the Lake Cargo market, the midwestern market, the Chicago market, and the coking coal market.[6] Moyer has made an extensive study of the midwestern market, which he describes as dominated by the Eastern Interior coalfields of western Kentucky, Indiana, and Illinois; to this list Phillip Giffen adds the southern utility market which has developed since the early 1950s.[7] In addition, the West contains another series of market areas. The tendency toward a regionalization of markets may be increasing as the electric utilities become the dominant purchasing group for coal production. Not only are there a limited number of sellers in many coal market areas, but with electric utilities as the leading consumers, there is also the issue of a small number of buyers, or "oligopsony."

The delineation of geographic market areas for coal remains a matter of considerable controversy. The issue is not solely academic, as market areas have become important considerations in antitrust and antimerger actions under Section 7 of the Clayton Act. The most restrictive criteria for geographic market areas have been advanced by Kenneth Elzinga and Thomas Hogarty, who argue that both supply and demand factors must be considered as both help determine the price of coal. They propose two criteria for a market area: (1) the "Little In From Outside" test (LIFO), a supply side question which asks if less than x percent of the product purchased in the area is imported from outside the area, and (2) the "Little Out From Inside" test (LOFI), a demand side question which asks if less than x percent of the product produced in the area is exported from inside the area. A "strong" market area would have no more than 10 percent "in from outside" and "out from inside." A "weak" market area would have up to 25 percent "in from outside" and "out from inside." With both these tests imposed for sales to electric utilities, only three distinct strong market areas emerge: an Appalachian-Eastern states market, a Dakotas market, and a Southwest market composed of Arizona, New Mexico, and Nevada. A weak market area for the Midwest-West is also evident.[8]

Not all coal produced is offered for sale on the commercial market. There have been since the early part of this century firms which are "captive" or "integrated" with firms in the steel and such other industries as cement or chemicals. The output of these firms is usually consumed by the parent company and is seldom sold to other consumers. Approximately 17 percent of coal produced in 1977 was captive production.[9] A much larger portion of the commercial coal production is not sold on the open market, however, but is tied to medium to long-term contracts ranging from one to thirty years. The electric utilities have begun to move toward direct captive ownership of coal producing firms (69 million tons in 1977, up from 15 million in 1970), but have achieved an even more significant degree of "semi-captive" production, or what C.L. Christenson calls "concealed integration:" "The really large integration of the electric utility plants with the mines which supply them is in the form of the long-range contract rather than by outright ownership of mines."[10] Coal which is not captive or contract is sold on the "spot" market; spot sales accounted for only 14 percent of steam coal in 1976, and 19.4 percent in 1977(when utilities were building up stockpiles in anticipation of the UMWA strike).[11]

If no single firm had a substantial proportion of the total coal industry production prior to and immediately following the Second World War, the situation has changed rapidly since 1950. The single largest firm accounted for 4.8 percent of total production in 1950, 11.4 percent in 1970, and 10.6 percent in 1976; the four largest firms moved from 13.6 percent in 1950 to 30.5 percent in 1970 and 25.1 percent in 1976; the eight largest from 19.4 percent in 1950 to 41.0 percent in 1970 and dropped to 34.3 percent in 1976; the fifteen largest from 26.4 percent in 1950 to 52.2 percent in 1970, then declined to 44.5 percent in 1976 as more companies began large surface operations in the West. Table 5-1 shows the percentage of total bituminous coal production by selected groupings of firms for 1950, 1960, 1970, and 1976.[12]

Economists refer to the share of the output of an industry accounted for by a given number of firms the "concentration ratio" for that number of firms. The Bureau of the Census reports concentration ratios for the four largest and eight largest companies. There is no clear line separating competitive and oligopolistic markets. John Blair prefers to use a four-largest standard, with three categories: "concentrated" industries in which the four largest firms account for 50 percent or more of the output, "moderately concentrated" industries in which their share is between 25 and 49 percent, and "unconcentrated" industries in which their share is less than 25 percent.[13] Carl Kaysen and Donald Turner use an eight-largest standard with slightly different definitions for similar categories: heavily concentrated "Type I Oligopolies," in which the eight largest firms account for 50 percent or more of the total industry output and the twenty largest account for 75 percent or more; moderately concentrated "Type II Oligopolies," in which the eight largest account for 33 to 49 percent and the twenty largest less than 75 percent; and an unconcentrated category in which the eight largest account for less than 33 percent of total industry output.[14]

By either the Blair or the Kaysen-Turner standards, the bituminous coal industry would be considered "unconcentrated" in 1950. Either standard would also judge the industry to be "moderately concentrated" in 1976. Some of the increasing concentration can be attributed to mergers among the largest firms; the number of firms producing over one million tons annually declined 27 percent from 1949 to 1976 while the market share of this group (82 companies in 1976) has increased from 50 percent to 72 percent. The number of firms producing less than 100,000 tons per year held steady from 1950 (6,926) to 1960 (6,994), but dropped to 3,386 in 1970. The number of independent firms producing from 100,000 to one million tons annually dropped from 557 in 1950 to 415 in 1960 (when coal output was 20 percent less) and rose to 532 in 1970 (when output was 20 percent greater than 1950). In summary, since 1950 the number of large producers (over one million tons) has decreased while their share of output has increased, the number of small firms (under 100,000 tons) has decreased and their share of output has also decreased, and the number of intermediate-sized firms has fluctuated while their market share has held roughly constant.[15]

TABLE 5-1

CONCENTRATION RATIOS FOR COAL PRODUCTION IN THE UNITED STATES, 1950-1976

Number of Firms	Percent of Total Production			
	1950	1960	1970	1976
Single Largest	4.9	7.0	11.4	10.6
2 Largest	9.1	13.9	22.1	19.0
3 Largest	11.6	18.2	27.1	22.6
4 Largest	13.6	21.3	30.5	25.3
8 Largest	19.4	30.4	41.0	34.4
12 Largest	23.6	36.5	48.9	40.9
15 Largest	26.5	39.6	52.2	44.7
20 Largest	30.4	44.4	56.5	49.6
50 Largest	45.2	59.9	68.3	N.A.
Producers of at least 100,000 Tons	82.8	87.0	93.8	92.6
Remaining	17.2	13.0	6.2	7.4

Sources: 1950-1970: Giffen, Industrial Concentration, p. 113;
1976: Keystone, U.S. Coal Production by Company, 1976, p. 4.

The analysis above is based on all bituminous coal producing firms in the United States and assumes a national market. The evidence argues for a series of regional markets rather than a single national market for coal. When examined on a regional basis, it is clear that coal production is highly concentrated in certain regions. Production in the Southwest is most highly concentrated. Moyer has shown that the midwestern coal industry was concentrated by the Blair and Kaysen-Turner standards by 1962, and Giffen has shown that production for the southeastern coal market was concentrated by the Kaysen-Turner standard by 1970.[16]

The subject of concentration in the coal industry and the energy industry generally has received detailed attention over the past several years from various units of the federal government, including the Federal Trade Commission, the Committee on Energy and Natural Resources of the U.S. Senate,[17] the General Accounting Office (GAO), and the Department of Justice. Of particular concern has been the growing ownership of coal producing companies and coal reserves by the petroleum industry. The GAO study identified three coal market regions: Eastern Appalachian, Central Western, and Southwestern. This study found a high degree of competition in the Eastern Appalachian market, with little possibility of domination of the market by any group of companies; considerable concentration in the Central Western market, but with a downward trend; and only in the Southwestern market is there an overwhelming domination by a few firms. The study used 1976 production data and 1974 reserves data. In the Eastern Appalachian market, the top 4 firms control about 22 percent of production and 15 percent of reserves. In the Central Western market, the top 4 firms control about 44 percent of production and 17 percent of reserves. In the Southwestern market, the top 4 firms control about 97 percent of production, with the top 2 (Peabody and Utah International) controlling 88 percent. The GAO concludes that the coal industry will remain competitive as long as continued entry by potential competitors is possible, which depends primarily on access to capital and to coal reserves. The capital is likely to be available, for major companies at least, and access to coal reserves in the West, the primary area of concern, will depend substantially on the leasing policy of the federal government.[18]

The Department of Justice was required to study concentration in the coal industry by Section 8 of the Federal Coal Leasing Amendments Act of 1975. Its study identified four coal market regions: the Appalachian, the Midwest, the Northern Plains, and the Southwest. The study finds the Appalachian market to be highly competitive; the Midwest market reasonably competitive, particularly under pressure from sellers in the Northern Plains; the Northern Plains market to be increasingly competitive; and the Southwest market to be seriously concentrated. Using 1974 production and reserves data, the study found that the top 4 firms controlled about 22 percent of production and 15 percent of reserves in the Appalachian market; 56 percent of production and 22 percent of reserves in the Midwest market; 38 percent of production and 14 percent of reserves in the Northern Plains market; and 64 percent of production and 30 percent of reserves in the Southwest market. These figures can be compared to national data of 25 percent of production and 13 percent of reserves controlled by the top 4 firms in 1974. The study notes that the specialized area of metallurgical coal production shows that the top 4 firms controlled 41 percent of all sales in 1974.[19]

LEADING COAL PRODUCING GROUPS IN THE UNITED STATES

The Bituminous Coal Wage Agreement of 1950 set the stage for mechanization of the industry and a merger movement that consolidated the oligopoly sector of the coal industry during the 1950s and 1960s. Through acquisition of other companies, Peabody Coal Company increased its share of national coal production from 3 percent in 1955 to 12 percent in 1972, and Consolidation Coal Company increased from 6 percent in 1955 to 11 percent in 1972.[20] Pittston and Island Creek followed a similar acquisition strategy. During the 1960s, several major coal producers were purchased by oil or mineral corporations: Pittsburg and Midway by Gulf Oil in 1963, Consolidation by Continental Oil in 1966, Peabody by Kennecott Copper in 1968, Old Ben by Standard Oil of Ohio in 1968, Island Creek by Occidental Petroleum in 1968, and Ayrshire by American Metal Climax in 1969. Only the acquisition of Peabody was successfully challenged by an anti-trust suit.[21]

The steel industry has long maintained coal producing subsidiaries, or "captive" companies, with U.S. Steel, Bethlehem, and Republic being the leading coal producers. In recent years, the electric utility industry has moved increasingly to direct ownership of coal producing companies. For the first time, in 1977 the electric utilities surpassed the steel industry in the total amount of captive production with 68.8 million tons, exceeding the steel companies' 45.2 million tons. The captive production of the electric utilities is projected to increase to 145 million tons by 1985, with the vast majority of the increase to come from the western states. Although the move to captive production has created some new management problems for the electric utility industry,[22] it is likely that the trend to captive ownership will increase, with consequent reductions in competitive pressures on the price of coal.

The leading coal producing companies and groups in the United States in 1977 are presented in Table 5-2. The Peabody Group, with 65.4 million tons, is the leading producer; its operations are concentrated in the Midwest and West, with no Appalachian production foreseen in the future. The Consolidation Group with 47.3 million tons is the second leading producer; its operations are concentrated in the eastern states, with a modest western investment. The Amax Group's production is concentrated in the Eastern Interior province, or Illinois Basin, and in Wyoming. Island Creek is primarily an Appalachian producer, with some production from western Kentucky. Pittston is an exclusively Appalachian producer, as is Bethlehem. U.S. Steel is primarily an Appalachian producer, but also mines

TABLE 5-2

TOP COAL PRODUCING COMPANIES IN THE UNITED STATES, 1977

Rank	Company (Parent Company)	Location of Mines	Tonnage (millions of tons) by Region			
			ORBES	Non-ORBES Eastern	Western	Total
1	Peabody Group (Peabody Holding Co.)	IL,IN,KY(W) OH/AL/AR,OK,CO, MT,AZ,UT	45.4 (69%)	.05 (0.1%)	19.9 (30%)	65.4 (100%)
2	Consolidation Group (Continental Oil Co.)	IL,OH,PA WV/TN/ND,UT	42.5 (90%)	.7 (2%)	4.0 (8%)	47.3 (100%)
3	Amax Group (Amax, Inc.)	IL,IN,KY(W)/WY	14.4 (52%)		13.3 (48%)	27.7 (100%)
4	Island Creek Group (Occidental Petroleum)	KY(E&W), OH, PA, WV/VA	13.8 (83%)	2.9 (17%)		16.7 (100%)
5	Pittston Group	KY(E), WV/VA	7.6 (53%)	6.7 (47%)		14.3 (100%)
6	U.S. Steel Corp.	KY(E),PA,WV/AL/ CO,UT	11.4 (91%)	1.2 (9%)	1.4 (10%)	14.0 (100%)
7	Arch Mineral	IL/AL/WY	4.2 (33%)	.5 (4%)	7.9 (63%)	12.6 (100%)
8	NERCO Group (Pacific Power & Light Co.)	MT,WY			12.1 (100%)	12.1 (100%)
9	Texas Utilities	TX			12.0 (100%)	12.0 (100%)

(Continued)

TABLE 5-2 Continued

Rank	Company (Parent Company)	Location of Mines	Tonnage (millions of tons) by Region			
			ORBES	Non-ORBES Eastern	Western	Total
10	Bethlehem Mines	KY(E),PA,WV	10.6 (100%)			10.6 (100%)
11	Peter Kiewit Group	MT,WY			10.3 (100%)	10.3 (100%)
12	American Electric Power Group	OH,WV/UT	9.3 (91%)		.9 (9%)	10.2 (100%)
13	Western Energy Co. (Montana Power Co.)	MT			9.8 (100%)	9.8 (100%)
14	Old Ben Coal Co. (Standard of Ohio)	IL,IN/VA	9.6 (99%)	.1 (1%)		9.7 (100%)
15	North American Group	OH,PA/ND	8.1 (91%)		.8 (9%)	8.9 (100%)
16	Pittsburg & Midway Coal Co. (Gulf Oil Co.)	KY(W)/MO,CO,NM	3.5 (43%)		4.7 (57%)	8.2 (100%)
17	Utah International (General Electric Co.)	NM			6.9 (100%)	6.9 (100%)
18	Freeman United Coal Co. (General Dynamics Corp.)	IL	6.7 (100%)			6.7 (100%)
19	Eastern Associated Group (Eastern Gas & Fuel Co.)	PA,WV	6.7 (100%)			6.7 (100%)
20	Westmoreland Coal Co.	WV/VA	2.5 (40%)	3.8 (60%)		6.3 (100%)

Source: Keystone, *U. S. Coal Production by Company. . . 1977*, pp. 8-11. Copyright (c) McGraw-Hill, Inc.

metallurgical coal in Colordao and Utah. Arch Mineral is a major producer both in Illinois and Wyoming. Utilities have become major captive producers in the Western states, as exemplified by NERCO in Montana and Wyoming, Texas Utilities in Texas lignite, and Western Energy in Montana. The American Electric Power Group is the only major utility coal captive with its production concentrated in the eastern states.

COAL INDUSTRY STRUCTURE IN THE ORBES STATES

Companies in the six ORBES states produced 468.8 million tons of coal in 1976, representing some 69 percent of national coal production, according to federal statistics. The largest coal producer in the ORBES states was the Peabody Coal Company, which mined over 51 million tons. Consolidation Coal Company produced 49 million tons. These two top producers thus mined over 100 million tons of coal in the ORBES states in 1976, some 21 percent of the production in the region. Production was slightly lower in 1977, totaling 88 million tons for the two companies combined in the ORBES states. Subsidiaries of oil companies (including Consol, Island Creek, Old Ben, Pittsburg and Midway, Valley Camp, and Ashland Coal) mined over 124 million tons of coal, or 26 percent of the production in the ORBES states in 1976. Subsidiaries of steel companies (including U.S. Steel, Bethlehem, and Republic) produced 38 million tons, 8 percent of ORBES production. Subsidiaries of electric utilities (including American Electric Power, Duke Power, Pennsylvania Power and Light, and Duquesne Light) mined 17 million tons, just under 4 percent of ORBES production. Subsidiaries of natural gas companies (including Eastern Associated and Zeigler Coal) mined 13 million tons, or 3 percent of coal production in the ORBES states in 1976.

Oligopoly sector or national companies produced over 311 million tons of coal in the ORBES states, some 67 percent of the region's production. Nearly 200 million tons of underground production in the ORBES states were accounted for by the national companies, 81 percent of the underground production in the region. A small majority of the surface-mined coal, 51 percent, was produced by the national companies in the region. The proportion of underground and surface production controlled by the national companies varies from state to state, but in each of the six ORBES states a majority of the total production is mined by the national or oligopoly sector companies. When Kentucky is separated into eastern and western districts, local companies are seen to mine a majority of total production in the eastern district. Although the national companies mine a majority of the underground production in all states (and both Kentucky districts), local companies mine a majority of the surface production in eastern Kentucky (and thus Kentucky statewide), Pennsylvania, and West Virginia. Table 5-3 shows the percentage of underground and surface production by national companies for the ORBES states in 1976.

TABLE 5-3

PERCENT OF UNDERGROUND AND SURFACE PRODUCTION IN THE ORBES STATES BY NATIONAL COMPANIES, 1976

State	Underground	Surface	Total
Illinois	99	94	97
Indiana	84	89	89
Kentucky	67	44	54
Eastern Kentucky	52	29	39
Western Kentucky	92	67	78
Ohio	94	50	65
Pennsylvania	90	24	58
West Virginia	77	36	70

Sources: Individual state reports.

ILLINOIS

The production of coal in Illinois is largely in the hands of national or oligopoly sector corporations. Of the total 1976 production of 58.1 million tons, the 11 companies producing over a million tons accounted for 56.5 million tons, or 97 percent (see Table 5-4). Of these 11 companies only Sahara is locally owned; the 10 remaining national companies thus produced 94 percent of the coal from Illinois. There were only 27 coal producing companies in Illinois in 1976. Peabody is the leading producer in Illinois, with 12.9 million tons in 1976; it is also the top producer in other states in the Eastern Interior province, Indiana and western Kentucky. Other leading producers include Consol with 8.1 million tons, Freeman United with 6.1 million tons, Amax with 6.0 million tons (also a leading producer in Indiana and western Kentucky), Southwestern Illinois Coal with 5.0 million tons, and Old Ben with 4.9 million tons in 1976 (also a leading producer in Indiana).

Many of the leading coal producing counties in Illinois have only one company operating in them; only Fulton, Perry and Williamson Counties have as many as four major companies actively mining. The small independent companies are active primarily in Jackson, Saline, and Williamson Counties.

The leading coal producing companies by county in 1976 for Illinois and other eastern states are listed in the county coal profiles in the Appendix to this report.

TABLE 5-4

TOP COAL PRODUCERS IN ILLINOIS, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal (Peabody Holding Co.)	8,444,515	4,453,122	12,897,637	2,617	788	3,405
Consolidation Coal (Continental Oil)	1,784,478	6,353,384	8,137,862	511	1,075	1,586
Freeman United Coal (General Dynamics)	3,978,672	2,147,772	6,126,444	1,967	471	2,438
Amax Coal (Amax, Inc.)	1,822,854	4,136,355	5,959,209	630	532	1,162
Southwestern Illinois Coal (Arch Minerals, Ashland Oil)	0	4,989,525	4,989,525	0	508	508
Old Ben Coal (Standard Oil of Ohio)	4,927,625	0	4,927,625	1,613	0	1,613
Zeigler Coal (Houston Natural Gas)	4,107,390	0	4,107,390	1,396	0	1,396
Monterey Coal (Exxon Corp.)	2,780,421	0	2,780,421	550	0	550
Midland Coal (Asarco)	0	2,762,050	2,762,050	0	587	587
Sahara Coal	1,097,751	830,308	1,928,059	459	150	609
Inland Steel Coal	1,894,893	0	1,894,893	613	0	613
Totals:	30,838,599	25,672,516	56,511,115	10,356	4,111	14,467

Source: Illinois Dept. of Mines and Minerals, Annual Report, 1976.

TABLE 5- 5

TOP COAL PRODUCERS IN INDIANA, 1976
(1,000,000 Tons or More)

Producer (Parent Company)	Tonnage		
	Underground	Surface	Total
Peabody Coal (Peabody Holding Co.)	360,798	10,742,183	11,102,981
Amax Coal (Amax, Inc.)	0	7,375,968	7,375,968
Old Ben Coal (Standard Oil of Ohio)	0	4,546,284	4,546,284
Totals:	360,798	22,664,435	23,025,233

Source: Indiana Bureau of Mines & Mining, Annual Report, 1976.

INDIANA

The production of coal in Indiana is heavily concentrated; three national companies (Peabody, Amax and Old Ben) are the leading producers. Of the total 1976 production of 25.9 million tons, these three companies produced 23.0 million tons, or 89 percent (see Table 5-5). There were an additional 94 independent coal mining companies in the state in 1976, forming a "competitive fringe" for the industry. Peabody is the leading producer in Indiana with 11.1 million tons, followed by Amax with 7.4 million tons and Old Ben with 4.5 million tons in 1976.

The three national companies are active in Clay, Greene, Knox, Pike, Sullivan, Vermillion, and Warrick Counties. In most of these counties small independent companies are also active. Locally owned, independent companies were the only producers in Daviess, Dubois, Gibson, and Spencer Counties, and in the marginal (less than 100,000 tons annually) coal producing counties of Fountain, Martin, Owen, Perry, and Vigo.

WESTERN KENTUCKY

Western Kentucky shares a portion of the Eastern Interior coal province, or Illinois Basin, with Indiana and Illinois. The production of coal in western Kentucky is slightly less concentrated than in the other two states. Peabody is the leading producer by far with 23.7 million tons in 1976, 44 percent of western Kentucky's total production of 54.3 million tons that year. Amax, the second largest producer in the Illinois Basin, is the third leading producer in western Kentucky with 4.0 million tons in 1976. Island Creek, primarily an Appalachian province producer, is second with 6.1 million tons. Island Creek and Mapco are the only two companies mining coal in both the western and eastern Kentucky fields. The 9 companies producing over a million tons each had a total production of 45.6 million tons in 1976, 84 percent of the region's total (see Table 5-6). Three of these companies (Green, Cimarron, and South Hopkins) are independents, locally owned. One company in the national sector (Zeigler, a subsidiary of Houston Natural Gas) produces a bit over a half-million tons a year. The 7 companies in the national or oligopoly sector of the industry thus produced 42.2 million tons or 78 percent of the region's coal in 1976. There were a total of 103 active coal mining companies in western Kentucky in that year.

Henderson is the only county with only a national company producing. Union County is dominated by national company production, with one large independent (Pyro). Both national and independent companies are active in Hopkins, McLean, Muhlenberg, Ohio, and Webster Counties, with the national companies producing a majority of the coal in each. The remaining coal producing counties have only independent companies active.

EASTERN KENTUCKY

Kentucky's eastern coalfields lie within the Appalachian province, and have a higher proportion of locally owned, independent coal companies. Falcon is the largest producer in eastern Kentucky with 5.3 million tons in 1976, making it the third largest producer in Kentucky statewide. U.S. Steel is second in eastern Kentucky and sixth statewide with 2.8 million tons. Island Creek produced 2.5 million tons in eastern Kentucky in 1976, ranking third for the region but, together with its western Kentucky production, second statewide. The 11 companies that produced over a million tons in 1976 had a total production of 23.3 million tons, or 26 percent of eastern Kentucky's coal production (see Table 5-7). Of these 11 companies, 3 are independents (Blue Diamond, Mountain Drive, Shamrock) under regional ownership. There were at least 60 companies producing over 100,000 tons in eastern Kentucky in 1976, and probably a thousand small companies producing less. National companies produced about 52 percent of the coal mined underground and only 29 percent of the surface mined coal.

The only major coal producing county dominated by a single company is Breathitt (Falcon). Harlan, Johnson, Martin, and Pulaski Counties have around half their coal produced by the national sector companies. The remaining counties find the local companies predominant.

TABLE 5-6

TOP COAL PRODUCERS IN WESTERN KENTUCKY, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total
Peabody Coal* (Peabody Holding Co.)	10,736,783	12,969,057	23,705,840	3,372	1,626	4,998
Island Creek Coal (Occidental Petroleum)	6,114,748	0	6,114,748	2,106	0	2,106
Amax Coal * (Amax, Inc.)	0	3,952,399	3,952,399	0	503	503
Pittsburg & Midway Coal (Gulf Oil Co.)	1,372,559	2,557,919	3,930,478	339	311	650
Webster County Coal (Mapco, Inc.)	2,696,641	0	2,696,641	358	0	358
Green Coal	0	1,480,848	1,480,848	0	196	196
Cimarron Coal	0	1,440,063	1,440,063	0	98	98
Brown Badgett (Natomas Co.)	475,447	802,347	1,277,794	60	136	196
South Hopkins Coal	1,024,483	0	1,024,483	185	0	185
Totals:	22,420,661	23,202,633	45,623,294	6,420	2,870	9,290

*Includes one-half production of jointly-owned Gibralter Coal Co.

Source: Kentucky Dept. of Mines & Minerals, Annual Report, 1976.

TABLE 5-7

TOP COAL PRODUCERS IN EASTERN KENTUCKY, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total
Falcon Coal (Diamond Shamrock)	52,472	5,245,719	5,298,191	33	461	494
U.S. Steel Corp.	2,763,618	0	2,763,618	916	0	916
Island Creek Coal Co.* (Occidental Petroleum)	--	--	2,466,245*	--	--	--
Eastover Mining Co. (Duke Power Co.)	2,397,386	0	2,397,386	766	0	766
Beth-Elkhorn Corp. (Bethlehem Mines)	1,997,178	0	1,997,178	1,132	0	1,132
Addington Bros. Mining Co. (Ashland Oil Co.)	0	1,610,993	1,610,993	0	315	315
Blue Diamond Coal Group	1,537,239	0	1,537,239	1,415	0	1,415
Mt. Drive Coal Corp.	0	1,525,249	1,525,249	0	326	326
Shamrock Coal Co.	1,350,000	0	1,350,000	70	0	70
Martin County Coal Co. (St. Joe Minerals Co.)	909,225	301,544	1,210,769	273	234	507
Martiki Coal Co. (Mapco, Inc.)	0	1,150,370	1,150,370	0	333	333
Totals:	11,007,118	9,833,875	23,307,238	4,605	1,669	6,274

* From Keystone, U.S. Coal Production by Company . . . 1976.

Source: Kentucky Dept. of Mines & Minerals, Annual Report, 1976.

OHIO

The production of coal in Ohio is moderately concentrated. Of the 1976 production of 46.8 million tons, 8 companies produced 29.5 million tons, or 63 percent (see Table 5-8). Consol is the leading producer in Ohio (and in the Appalachian region generally) with 8.1 million tons in 1976, followed by North American with 6.4 million tons, the American Electric Power Group with 5.6 million tons, and Peabody with 3.8 million tons. Ohio has only 200 companies mining coal, the smallest number for an ORBES state in the Appalachian region.

Of the major coal producing counties, Meigs and Monroe have only one company actively mining (AEP and North American, respectively). Oligopoly sector companies mine a majority of the coal in Belmont, Coshocton, Harrison, Jefferson, Muskingum and Perry Counties, and have significant production in Guernsey and Morgan Counties. Local independent companies mine the majority of the coal in Columbiana, Tuscarawas, and Vinton Counties and in the remaining coal producing counties.

PENNSYLVANIA

In Pennsylvania, the 12 companies producing over a million tons in 1976 accounted for a total of 43.9 million tons, 51 percent of the state's total production of 85.7 million tons (see Table 5-9). Approximately a third of Pennsylvania's current production is metallurgical grade coal, and it is not surprising that the major steel companies are among the leading producers. Bethlehem has the largest tonnage in the state with 6.1 million tons in 1976; U.S. Steel is fourth with 5.2 million tons; Jones and Laughlin is seventh with 3.0 million tons; and Republic is ninth with 2.3 million tons. Rochester and Pittsburgh is the second leading producer with 5.8 million tons, and Consol is third with 5.7 million tons in 1976. Overall, oligopoly sector companies produced 90 percent of all coal mined underground, but only 24 percent of the surface mined coal. There were a total of 76 companies that produced over 200,000 tons in 1976, and approximately 900 smaller mines engaged primarily in surface mining.

Three leading coal producing counties in Pennsylvania are dominated by the national or oligopoly sector companies: Indiana, Greene, and Washington. National companies also produce a majority of the coal in Allegheny, Armstrong, Cambria, Centre, and Clarion Counties. National companies accounted for a minority of the coal in Butler, Clearfield, Fayette, Jefferson, Somerset, and Westmoreland Counties, among the major coal producing counties.

TABLE 5- 8

TOP COAL PRODUCERS IN OHIO, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total
Consolidation Coal (Continental Oil Co.)	2,569,231	5,571,463	8,140,694	1,395	735	2,130
North American Coal Group	6,390,546	0	6,390,546	3,936	0	3,936
American Electric Power Group	2,159,906	3,486,471	5,646,377	1,868	*	1,868*
Peabody Coal (Peabody Holding Co.)	2,443,542	1,349,691	3,793,233	*	*	*
Youghiogheny & Ohio Coal	2,082,150	0	2,082,150	1,425	0	1,425
R & F Coal Co. (Shell Oil Co.)	0	1,280,786	1,280,786	0	247	247
Marietta Coal Co.	0	1,116,445	1,116,445	0	*	*
Ohio Coal & Construction Co. (American Industries & Resources)	0	1,022,785	1,022,785	0	134	134
Totals:	15,645,375	13,827,641	29,473,016	8,624	1,116	9,740

*Employment not fully reported.

Source: Ohio Division of Mines, Annual Report, 1976.

TABLE 5-9

TOP COAL PRODUCERS IN PENNSYLVANIA, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Underground	Surface	Total	Underground	Surface	Total
Bethlehem Mines Corp.	6,131,391	0	6,131,391	4,525	0	4,525
Rochester & Pittsburgh Coal Co.	5,694,475	103,522	5,797,997	1,863	14	1,877
Consolidation Coal Group (Continental Oil Co.)	5,676,352	0	5,676,352	2,574	0	2,574
U.S. Steel Corp.	5,202,868	0	5,202,868	2,614	0	2,614
Gulf Resources & Chemicals Group	0	5,031,000*	5,031,000*	0	856+	856+
North American Coal Group	3,322,542	0	3,322,542	2,160	0	2,160
Jones & Laughlin Steel	3,035,693	0	3,035,693	2,218	0	2,218
Pennsylvania Mines Group (Pennsylvania Power & Light)	2,845,557	0	2,845,557	1,704	0	1,704
Republic Steel Corp.	2,320,132	0	2,320,132	1,271	0	1,271
Barnes & Tucker Co. (Alco Standard Corp.)	1,717,818	0	1,717,818	1,468	0	1,468
Benjamin Coal Co.	0	1,717,160	1,717,160	0	291	291
Duquesne Light Co.	1,079,199	0	1,079,199	583	0	583
Totals:	37,026,027	6,851,682	43,877,709	20,980	1,161	22,141

*Keystone, U.S. Coal Production by Company . . . 1976.

Source: Pennsylvania Dept. of Environmental Resources, Annual Report, 1976.

WEST VIRGINIA

In West Virginia, 17 companies produced over a million tons of coal in 1976, accounting for 65.8 million tons or 60 percent of the state's total production of 108.8 million tons (see Table 5-10). About half of West Virginia's output is metallurgical grade coal. Consol is the state's leading producer by far, with 25.3 million tons, 23 percent of the state's total coal output. Other leading producers include Eastern Associated with 7.2 million tons, Island Creek with 4.2 million tons, U.S. Steel with 3.8 million tons, Valley Camp with 3.4 million tons, Westmoreland with 2.8 million tons, Pittston with 2.7 million tons, and the American Electric Power Group with 2.7 million tons in 1976. Among the top 17 coal producers, only Amherst, Barbour, and King Knob are independent, regionally owned companies. Oligopoly sector or national companies produced 77 percent of the coal mined underground but only 36 percent of the coal mined by surface methods in West Virginia in 1976. There were a total of 1,269 companies mining coal in the state in 1976.

National companies are the dominant producers in Boone, Brooke, Kanawha, Lincoln, McDowell, Marion, Marshall, Mercer, Monongalia, and Ohio Counties. They produce around half or more of the coal in Fayette, Grant, Greenbriar, Harrison, Logan, Nicholas, and Raleigh Counties. National companies produce significantly less than half of the coal in Barbour, Mingo, and Preston Counties. The remaining counties, mostly minor coal producers, have only independent, locally owned companies active.

COAL INDUSTRY STRUCTURE IN THE NON-ORBES EASTERN STATES

In three of the remaining eastern states (Georgia, Maryland, and Tennessee), the national or oligopoly sector companies play a minimal role and production is almost exclusively in the hands of independent companies. Georgia has no more than four coal companies actively mining, all regionally owned. Maryland had 65 companies mining in 1976, only two of which were owned by interests outside the Maryland-West Virginia region (Delta Mining owned by Cerro Corporation of New York; and Phillips Coal owned by Kaneb Services of Houston). No Georgia or Maryland companies produced more than 300,000 tons of coal in 1976, although Mapco, Inc. of Tulsa plans to open a major mine in the 2 million tons-per-year range in Garrett County, Maryland. The only oligopoly sector company mining coal in Tennessee is Consol, which produced over 866,000 tons in 1976, around 10 percent of the state's output in that year; approximately 170 independent companies are actively mining coal in Tennessee. Oligopoly sector production in Alabama and Virginia, on the other hand, is extensive enough to warrant separate commentary.

TABLE 5-10

TOP COAL PRODUCERS IN WEST VIRGINIA, 1976 (1,000,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total
Consolidation Coal (Continental Oil Co.)	24,769,987	506,732	25,276,719	10,694	159	10,853
Eastern Associated Coal (Eastern Gas & Fuel)	6,946,057	239,095	7,185,152	5,671	40	5,711
Island Creek Coal Co. (Occidental Petroleum)	3,975,253	224,500	4,199,753	2,689	127	2,816
U.S. Steel Corp.	3,775,168	11,312	3,786,480	1,990	19	2,009
Valley Camp Coal Co. (Quaker State Oil)	3,270,614	121,800	3,392,414	1,580	31	1,611
Westmoreland Coal Co.	2,810,975	27,556	2,838,531	2,423	43	2,466
Pittston Group	2,261,368	475,380	2,736,748	1,516	282	1,798
American Electric Power Group	1,339,038	1,355,876	2,694,914	840	419	1,259
Bethelehm Mines Corp.	2,454,159	0	2,454,159	1,512	0	1,512
Cannelton Industries (Algoma Steel Corp.)	1,192,893	690,258	1,883,151	789	116	905
Armco Steel Corp.	1,767,100	0	1,767,100	747	0	747
Amherst Coal Co.	1,345,888	293,860	1,639,748	1,053	89	1,142

(Continued)

Table 5-10 Continued

Producer (Parent Company)	Tonnage			Employees		
	Underground	Surface	Total	Underground	Surface	Total
Carbon Fuel Co. (International Telephone & Telegraph)	1,262,301	205,057	1,467,358	991	88	1,079
Barbour Coal Co.	0	1,209,139	1,209,139	0	283	283
King Knob Coal Co.	0	1,151,439	1,151,439	0	399	399
Allied Chemical Corp.	899,021	179,977	1,078,998	977	43	1,020
Olga Coal Co. (Lykes Resources)	1,020,675	0	1,020,675	657	0	657
Totals:	59,090,497	6,691,981	65,782,478	34,129	2,138	36,267

Source: West Virginia Dept. of Mines, Annual Report, 1976.

ALABAMA

In Alabama 5 companies produced over a million tons and 4 more companies produced between 600,000 and a million tons of coal in fiscal year 1975-76 (see Table 5-11). Together these 9 companies produced 12.9 million tons, 70 percent of the state's total of 18.4 million tons of coal mined in that period. The leading producer with 3.8 million tons, Alabama By-Products, is a utility captive. The Drummond Company, with 2.7 million tons, is an independent. U.S. Steel is the third leading producer with 1.3 million tons. The Cobb Coal Group and Taylor Coal are independents. Jim Walter Resources presently mines under a million tons a year, but has announced expansion plans that could make it the leading coal producer in the state. There were approximately 200 companies mining coal in Alabama in 1975-76.

Production in Jefferson County is dominated by the major producers and in Fayette County by Republic Steel; Alabama By-Products produces a minority of the coal in Walker County. In the remaining counties, the independents are the predominant producers.

VIRGINIA

In Virginia there were 8 companies producing over a million tons of coal in 1976, accounting for 27.8 million tons or 70 percent of the state's output of 40.0 million tons that year (see Table 5-12). The Pittston Group (through its Clinchfield Division and subsidiary Jewel Ridge Coal) is the leading producer with 10.2 million tons in 1976, followed by Westmoreland with 4.6 million tons and Island Creek with 3.1 million tons.

Pittston's Clinchfield Division is the dominant producer in Dickenson and Russell Counties, and Westmoreland is the dominant producer in Wise County. Island Creek, Pittston's Jewel Ridge, Jewell Coal & Coke, and Sovereign Coal are leading producers in Buchanan County, which is also home to numerous small independent companies. United Coal Companies, a locally owned independent, has consolidated mineral rights, production, and coal sales of a number of smaller operations in Buchanan County. Itmann Coal, a joint venture of Consol, National Steel, Bethlehem Steel and Dominion Foundaries and Steel, is the leader producer in Tazwell County.

The Annual Reports of the Virginia Department of Labor and Industry through 1977 did not include data on production by company; this information was deemed confidential under state law. This law has reportedly been changed, and future reports may include the kind of information on location, production, and employment by company that is available in other state reports on the coal industry. Presently such information has to be constructed through data in Keystone publications or other sources.

TABLE 5-11

TOP COAL PRODUCERS IN ALABAMA, FISCAL YEAR 1975-76 (600,000 tons or more)

Producer (Parent Company)	Tonnage			Employees		
	Under-ground	Surface	Total	Under-ground	Surface	Total
Alabama By-Products Corp.	3,837,342	0	3,837,342	2,203	0	2,203
The Drummond Co.	0	2,663,195	2,663,195	0	773	773
U.S. Steel Corp.	1,288,520	0	1,288,520	935	0	935
Cobb Coal Group	0	1,210,037	1,210,037	0	858	858
Taylor Coal Co.	0	1,101,365	1,101,365	0	464	464
Jim Walters Resources	757,385	0	757,385	862	0	862
Republic Steel	736,105	0	736,105	465	0	465
Burgess Mining & Construction	0	709,389	709,389	0	344	344
Mead Coal	600,209	0	600,209	567	0	567
Totals:	7,219,561	5,683,986	12,903,547	5,032	2,439	7,471

Source: Alabama Dept. of Industrial Relations, Annual Statistical Report, Fiscal Year 1975-76.

TABLE 5-12

TOP COAL PRODUCERS IN VIRGINIA, 1976

Company	Tonnage	Employees
Pittston Group	10,247,988	4,383
Westmoreland	4,600,000	1,913
Island Creek	3,097,062	NA
United Coal Companies	3,000,000	NA
Jewell Coal & Coke	2,780,000	NA
Virginia Iron, Coal & Coke	1,520,000	NA
Itmann Coal Company	1,444,125	885
Sovereign Coal Group	1,070,787	NA
Total:	27,759,962	

Source: Keystone, U.S. Coal Production by Company . . . 1976, and Keystone Coal Industry Manual, 1978. Copyright (c) McGraw-Hill, Inc.

STRUCTURE AND PERFORMANCE IN THE COAL INDUSTRY

Market structure is important insofar as it affects the conduct and performance of firms in an industry. Economic theories of oligopolistic markets suggest that the possibility of successful collusion among sellers is enhanced by greater concentration, resulting in higher long-run rates of profit. It is not evident that the current degree of concentration in the coal industry has made possible collusion to fix prices at a level higher than would result from a competitive market. Coal prices have risen substantially over the past decade, but much of this can be attributed to increased costs of labor and capital due to inflation, and to the internalization by the industry of the costs of health and safety and of reclamation required by new federal legislation. Considerable windfall profits were realized during the "energy crisis" coal boom of 1974, but these were achieved to a greater extent by the smaller independents who could take advantage of the steep rise in spot market prices rather than the larger companies locked into long-term contracts.[23]

Coal is recognized to be a cyclical industry, and thus independent coal producers require a rate of return well above the prime interest rate to attract investors in a market economy. In most recent years (1974 excepted), the return to shareholders' equity and total invested capital has not been sufficient to readily attract capital, according to a Bureau of Mines study.[24] The oil and gas companies and other industrial conglomerates have argued that their entry into the coal industry is providing capital investment and management expertise where it is greatly needed. Others have expressed concern that energy companies might restrict development of coal reserves in the short run in order to promote oil or gas sales. The coal and petroleum industries argue that the coal producing subsidiaries of energy companies have performed as well as or better than the independent firms in the industry.[25] The only major case to the contrary is the alleged diversion of capital from coal to oil development by Occidental Petroleum from its subsidiary Island Creek.[26]

If the threat to competition in the coal industry through increasing concentration has not been great to date, there is still a considerable potential for restricted competition in the future. The acquisition of coal companies and coal reserves by oil companies remains a serious problem. One issue is interfuel competition, the extent to which coal, oil, and gas may compete in the energy market. Another is the speed with which coal gasification and liquefaction become competitive with natural gas and refined petroleum. Presently, it appears that the high cost of the synthetic fuels, in light of the adequate supplies of natural gas and oil, will keep them non-competitive until some time into the Twenty-first Century. If the federal government follows an appropriate policy in leasing its 40 million acres of western coal lands, it is unlikely that the oil industry will hold substantial blocks of coal out of production for long periods of time. Enhancing competition in the coal industry would best be served by restricting the entry of oil companies into coal production through the acquisition of existing coal companies, thus requiring their entry as _de novo_ coal producers, according to one study.[27]

Captive ownership of coal producing companies by the electric utilities also has the potential for adverse effects on the price of coal, as such production may be more costly than coal purchased through competitive bidding. Higher costs for coal production can be passed on to electricity customers through fuel adjustment clauses, in the absence of strict regulatory oversight. On the other hand, captive coal producers in general often have had better mine safety records than the independent companies; they may be under less competitive pressure and thus better able to internalize the cost of safety by including it in the price of the final product.

We have much to learn about the possible effects of coal ownership by oil, gas, steel, metal, and utility companies. Consolidation of ownership by the oligopoly sector may lead to increasing political influence on federal and state coal regulatory policy by companies in the coal industry. Large companies have greater financial resources, technical expertise, and access to government officials than do smaller companies. On the other hand, ownership by absentee firms may reduce local-level political corruption and increase the willingness of county government to tax the coal companies, thus providing more funds to the public sector in coal counties.

By virtue of their access to capital, oligopoly sector companies can increase the scale of their operations, with increased productivity and improved health and safety in the long run. Unionization is more likely among oligopoly sector companies. Although large scale operations will increase the potential for environmental damage, the increased resources and public visibility of the national corporations also make it more likely that reclamation will be achieved. These and other issues remain subjects for further study.[28]

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CHAPTER VI

COAL LAND AND MINERAL OWNERSHIP

Land and mineral ownership in the ORBES region, with direct and indirect effects on coal production, are significant--although frequently overlooked--factors for private and public planning. Ownership patterns influence which coal reserves will be developed, by whom, and with what methods. Indirectly, by influencing the condition of local social and economic infrastructures, governmental effectiveness, taxation, adequacy of public and private services, quality of life in coal producing communities, and, hence, labor force satisfaction, the ownership pattern is an important variable affecting productivity.

This chapter summarizes the ownership information which is available by state and county and describes the influence of land ownership on the social and economic impacts of coal mining and on coal productivity.

THE OWNERSHIP PATTERN

Citizens and scholars in coal producing regions of the eastern United States long have been aware of the problems associated with high levels of absentee ownership of coal acreage. This awareness has been particularly acute in the Central Appalachian portion of the ORBES region where economic dependence on the coal industry has been greatest. Even there, sociologist Helen Lewis has noted "although many writers on Appalachia speak of the outside control of the wealth, the degree and the extent to which this is true has been only slightly and sporadically documented. There are no systematic, thorough studies of the land and mineral ownership of the region."[1] The statement was made a decade ago, and ownership studies are still "scattered, uneven, and incomplete" as a large citizens' research group complained this year.[2]

Unfortunately, for numerous reasons, such data are difficult to obtain. With the exception of Illinois, no comprehensive studies of coal and land ownership in the ORBES region have been attempted. In most states, such data are available only in county courthouses. Varying styles of record-keeping--as well as the complex separation of ownership into holdings in fee simple, surface ownership, coal rights, timber rights, and occasionally other mineral, gas, and oil rights--make a comprehensive assembly of ownership data a massive project, although one well justified by the social and economic significance of the information. Especially in counties with histories of gross underassessment of property values and taxation, land owners have been unwilling to make public the facts of coal ownership. Often they are protected by public officials. Even where property records are centralized, as was the case for a brief time in Kentucky, they are difficult to obtain. We were denied access to such records for the ORBES research by the Kentucky Commissioner of Revenue, despite the fact that state law seems to suggest that tax rolls "shall be available to the public" as long as inspection "would not be detrimental to public interest or used for commercial or business purposes." Other researchers report similar obstacles. In fact, even in the western states, where coal is found largely on federally-owned lands, "the mining industry is believed to have much more detailed information than is available to the public."[3] For these reasons, ownership information in the ORBES region is very incomplete. Interesting patterns are apparent, however, in the data which are available for three ORBES states--Illinois, Kentucky, and West Virginia--as well as for Tennessee and Virginia.

Table 6-1 presents a listing of private companies holding 20 million or more tons of total coal reserves on a nation-wide basis. Many of the large land and mineral owners of the ORBES region are included here and can be seen in a national perspective. The federal government owns or controls lands that contain about half of the nation's 260 billion tons of recoverable coal reserves, mostly in the West. In the East, the federal government owns only some 433,000 acres of coal lands.

ILLINOIS

Illinois is believed to contain 161 billion tons of coal resources in 86 of its 102 counties. According to the study Who's Mining the Farm by the Illinois South Project, some 379,763 acres of coal lands are owned by coal companies. Though far less extensive than the vast coal acreages of the Central Appalachian states, ownership is more highly concentrated in Illinois than elsewhere in the ORBES region. Twenty corporations own 99.3 percent (377,188 acres) of these coal lands (see Table 6-2). The top six of these coal companies (Peabody, Amax, Midland, Consolidation, Freeman United Coal, and Arch Minerals) own 83 percent (314,824 acres) of the total. Of these twenty corporations, the majority are subsidiaries of oil producers (8). Others are subsidiaries of mining and industrial concerns (3), railroads (2), and steel producers (2). Two electrical energy producers (Commonwealth Edison and TVA) are also among the top twenty. Conspicuously absent are the huge landholding companies, like Kentucky River Company and the Pocahontas Company, which lease vast lands for mineral extraction in Central Appalachia.

In contrast with the Appalachian fields, coal companies often own the land, not just the mineral rights. Also in contrast with Appalachian counties, coal companies own comparatively less of the counties' total surface acreage. In Perry County, for example, Illinois' leading coal producer and the county with the largest number of corporate owned acres (55,542), only 20 percent of the county land is held by coal companies (see the Appendix for data on ownership by county). Generally, companies rarely buy surface acreage, other than small amounts for operating facilities, in counties which contain coal reserves that can only be extracted by deep mining.

TABLE 6-1

ESTIMATED COAL RESERVES OWNERSHIP IN THE UNITED STATES, 1978
(Firms Holding 200 Million or More Tons)

Owner (Parent Company)	Reserves (Billion Tons)
Consolidation Coal (Continental Oil)	13.700
Burlington Northern	11.400
Rocky Mountain Energy (Union Pacific)	10.000
Peabody Coal (Peabody Holding Co.)	8.900
Monterey Coal (Exxon)	8.400
El Paso Natural Gas	5.200
North American Coal Corporation	5.100
Amax Coal (Amax, Inc.)	5.045
Island Creek Coal (Occidental Petroleum)	4.430
Mobil Corporation	3.500
United States Steel	3.000
Pittsburgh & Midway Coal (Gulf Oil)	2.600
Atlantic Richfield	2.200
Sun Oil	2.200
Phillips Petroleum	2.000
Bethlehem Mines (Bethlehem Steel)	1.800
NERCO (Pacific Power & Light)	1.700
Clinchfield Coal Division (Pittston)	1.700
Tenneco	1.700
Texaco	1.650
Central Appalachian Coal (American Electric Power)	1.500
Kerr McGee Coal (Kerr McGee)	1.500
R & F Coal (Shell Oil)	1.460
CanPac Minerals Limited	1.410
Pocahontas Land (Norfolk & Western Railway)	1.400
Utah International (General Electric)	1.300
Westmoreland Resources	1.100
Hillman Coal & Coke	1.100
Eastern Associated Coal (Eastern Gas & Fuel)	1.058
Ziegler Coal (Houston Natural Gas)	1.000
Western Energy (Montana Power)	1.000
NICOR (Northern Illinois Gas)	1.000
Westmoreland Coal	.849
Old Ben Coal (Standard Oil of Ohio)	.825
Kentucky River Coal	.800
Kaneb Services	.750
Greenwood Stripping	.735
Cape Breton Development	.724
Chevron Oil	.700
Ashland Coal (Ashland Oil; Arch Minerals)	.650
Webster County Coal (MAPCO)	.650
A. T. Massey Coal (St. Joe Minerals)	.650

(Continued)

Table 6-1 Continued

Owner (Parent Company)	Reserves (Billion Tons)
Freeman United Coal (General Dynamics)	.600
Knife River Coal (Montana Dakota Utilities)	.600
Kentucky Home Coal (D.D. Stewart)	.600
Belco Petroleum	.524
Morrison Knudsen Company	.500
Youghiogheny & Ohio Coal (Panhandle Eastern Pipeline)	.500
Columbia Gas System	.484
Valley Camp Coal (Quaker State Oil)	.475
Consolidated Natural Gas	.450
Alabama By-Products	.445
Tennessee Valley Authority	.412
Armco Steel Company	.400
Coastal States Energy (Coastal States Gas)	.400
Penn Pocahontas Coal	.400
Southern Electric Generating	.400
Kentucky King Coal	.395
Wisconsin Steel (International Harvester)	.370
Santa Fe Industries	.370
Reynolds Metals Company	.350
Jim Walter Corporation	.350
Zapata Coal	.350
Mintech Corporation	.337
Virginia Iron, Coal & Coke (Bates Manufacturing)*	.300
Southern Railway System	.280
Madison Coal (Illinois Central Gulf Railroad)	.276
Colowyo Coal (W.R. Grace & Co.; Hanna Mining Co.)	.265
Allegheny River Mining Company	.250
LTV Corporation	.250
Eastover Mining (Duke Power)	.250
Stearns Mining Company (Blue Diamond Coal)	.250
Barnes & Tucker; Upshur Coals (ALCO Standard)	.243
Union Carbide	.235
Merchants Petroleum	.221
Bane Coal	.200
Coalite (Great Northern Nekoosa Co.)	.200
Jones & Laughlin Steel	.200
Kaiser Steel	.200
McAllester Fuel	.200
New Mexico and Arizona Land Company	.200
Palmer Coking Coal	.200
Western Coal (Public Serv. of New Mexico; Tucson Gas & Elec.)	.200
Energy Development (Ruhr-American Coal)	.200
Solar Fuel Company	.200

*Virginia Iron, Coal & Coke was recently purchased by American Natural Resources, a foreign energy corporation.

Source: 1978 Keystone Coal Industry Manual (New York: McGraw-Hill Publishing Co., 1978). Copyright (c) McGraw-Hill, Inc.

TABLE 6-2

TWENTY TOP COAL LAND OWNERS IN ILLINOIS

Owner (Parent Company)	Acres
1. Peabody Coal Company, St. Louis, MO (Peabody Holding Co.: Williams Energy, Newmont Mining & Equitable Life, New York, NY; Bechtel Corp. and Fluor Corp., San Francisco, CA; Boeing Corp., Seattle, WA)	85,357
2. Amax Coal Company, Greenwich, CT (Principal owner: Standard Oil of California)	56,867
3. Midland Coal Company (ASARCO, Inc., formerly American Smelting and Refining Co., New York, NY)	50,245
4. Consolidation Coal Company, Pittsburgh, PA (Continental Oil Co., Stamford, CT)	49,863
5. Freeman United Coal Mining (General Dynamics, St. Louis, MO)	38,935
6. Arch Minerals Corporation (Ashland Oil Co., Russell, KY)	33,557
7. Zeigler Coal Company (Houston Natural Gas Corp., Houston, TX)	17,178
8. Nuclear Resources (Commonwealth Edison, Chicago, IL)	9,415
9. Sahara Coal	9,128
10. Pittsburgh and Midway Coal Mining Company (Gulf Oil Corp., Pittsburgh, PA)	4,799
11. Madison Coal Company (Illinois Central Gulf Railroad Co., Chicago, IL)	4,627
12. Inland Steel Company, Chicago, IL	3,334
13. Old Ben Coal Company (Standard Oil of Ohio, Cleveland, OH)	3,272

(Continued)

Table 6-2 continued

Owner (Parent Company)	Acres
14. Monterey Coal Company (Exxon Corp., New York, NY)	2,571
15. United States Steel Corporation, New York, NY	1,872
16. Tennessee Valley Authority	1,825
17. Chicago Harrisburg Coal Company (Penn Central Company, Philadelphia, PA)	1,650
18. Mobil Oil Corporation, New York, NY	1,607
19. Utah International, Inc. (General Electric Co., Fairfield, CT)	917
20. Kerr-Mcgee Corporation, Oklahoma City, OK	169
Total:	377,188

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

KENTUCKY

In 1976 the Kentucky State Department of Revenue required all owners of coal lands in Kentucky's 48 coal counties to report their holdings. While thousands of small owners failed to do so, ownership data were obtained for more than two-thirds of the state's coal reserves, including virtually complete information on the holdings of large owners. As is true for coal production (where the top 25 producers mined approximately 50 percent of Kentucky's coal in 1976), ownership of coal reserves is somewhat less concentrated than in West Virginia and considerably less than in Illinois. Nonetheless, the top 25 owners of coal acreage in Kentucky, Table 6-3, control approximately one-third of total coal acreage.[4] Of these 25 owners, only 3 are based in Kentucky. The two largest owners are coal mining companies, Island Creek (91,678 acres) and Peabody (84,514 acres). Other large owners include petroleum companies (in addition to Occidental, which owns Island Creek), railroads, steel and aluminum manufacturers, and independent land companies. (The largest independent land company is the Kentucky River Coal Corporation, the state's third largest owner with 94,012 acres.) Three of the largest leaseholders of Kentucky coal acreage are believed to be Ashland Oil, Inc. (250,000 acres), Falcon Seaboard (100,000 acres), and the American Electric Power Company of New York (86,000 acres).

Since the Kentucky Commissioner of Revenue refused to grant us assess to property records, county-level ownership information is not centrally available. We did, however, obtain data from Harlan County in eastern Kentucky which will serve to illustrate the local ownership pattern (see Appendix). Seventeen out-of-state corporations own a total of 140,726 acres of Harlan County. This represents 48 percent of the privately owned land in the county. The largest owner in the county is United States Steel Corporation, which owns more than 29,000 acres. The five largest land owners--U.S. Steel, Kentenia Corporation (a landholding company established by Warren Delano, uncle of Franklin D. Roosevelt and a director of the Louisville and Nashville Railroad), Harlan County Land Company, Georgia-Pacific Corporation, and Eastover Land Company (a subsidiary of Duke Power Company, Charlotte, North Carolina)--own a combined total of 96,124 acres, representing 33 percent of Harlan County. Similarly, non-local corporations own 42 percent or 88,907 acres of Perry County's total private land (210,826 acres). The two largest owners are Virginia Iron, Coal and Coke (formerly a subsidiary of Bates Manufacturing Company, Lewiston, Maine, which was recently acquired by American Natural Resources, a foreigh energy corporation), with 41,970 acres of coal reserves and the Kentucky River Coal Corporation with 29,685 surface acres.

TABLE 6-3

THE TOP 25 OWNERS OF COAL ACREAGE IN KENTUCKY

Owner (Parent Company)	Acres
1. Island Creek Coal Company, Lexington, KY (Occidental Petroleum, Los Angeles, CA)	91,678
2. Peabody Coal Company, St. Louis, MO (Peabody Holding Co.: Williams Energy, Newmont Mining, and Equitable Life, New York, NY; Bechtel Corp., and Fluor Corp., San Francisco, CA; Boeing Corp., Seattle, WA)	84,514
3. Kentucky River Coal Corporation, Lexington, KY	84,012
4. *Virginia Iron, Coal and Coke Company, Roanoke, VA (Bates Manufacturing Co., Lewiston, ME)	81,000
5. Trusts for heirs of Justin Potter, c/o Commerce Union Bank, Nashville, TN	75,309
6. Pocahontas Land Corporation, Bluefield, WV (Norfolk and Western Railway Co., Roanoke, VA)	72,864
7. Tennessee Valley Authority, Knoxville, TN	71,601
8. Stearns Coal and Lumber Company, Stearns, KY	69,554
9. Western Pocahontas Corporation, Roanoke, VA (Chessie System, Cleveland, OH)	57,671
10. Aluminum Company of America, Pittsburgh, PA	46,883
11. Reynolds Metals, Richmond, VA	46,856
12. Berwind Corporation, Charleston, WV	44,839
13. Pittsburgh and Midway Coal Company, Kansas City, MO (Gulf Oil Corp., Pittsburgh, PA)	43,490
14. Bethlehem Steel Corporation, Bethlehem, PA	42,098
15. Elkhorn Coal Corporation, Charleston, WV	36,917
16. Blue Diamond Coal Company, Knoxville, TN	34,118

(Continued)

Table 6- 3 continued

Owner (Parent Company)	Acres
17. U.S. Steel, Pittsburgh, PA	30,000
18. National Mines Corporation (National Steel Corp., Pittsburgh, PA)	29,767
19. Consolidation Coal Company, Pittsburgh, PA (Continental Oil Co., Stamford, CT)	28,896
20. Big Sandy Company, Boston, MA	28,887
21. Beaver Dam Coal Company, Beaver Dam, KY	28,733
22. Owen Jones, c/o S.B. Knuckles, Barbourville, KY	26,037
23. Warfork Land Company, Huntington, WV	25,584
24. William Bond, St. Petersburg, FL	24,500
25. Fordson Coal Company (Ford Motor Co., Dearborn, MI)	23,906
Total:	1,229,714

Source: Howard Fineman, "Owners of State's Coal Changing as Energy Firms Move In," The Louisville Courier-Journal, Sunday, December 18, 1977, p. A-18.

*Virginia Iron, Coal and Coke Company was recently purchased by American Natural Resources, a foreign energy corporation.

WEST VIRGINIA

A fairly adequate picture of land ownership is available for the state of West Virginia. Although completed five years apart, utilizing data from different samples of counties, and aggregating ownership data with slightly different methods, studies by J. Davitt McAteer[4] and Tom D. Miller[5] provide a picture of "Who Owns West Virginia." They document the pattern of extensive absentee ownership which has so long influenced development in the Central Appalachian portion of the eastern coalfields. McAteer surveyed 14 top coal producing counties in West Virginia which produced 88 percent of the state's total coal tonnage in 1968. He found that the top 25 property owners, only 9 of which were West Virginia-based businesses, owned approximately 44 percent of the land in the counties surveyed. In a 1974 state-wide survey, Miller found that 24 out-of-state corporations and land companies owned one third of West Virginia's total 12 million privately held acres. In addition, he found that 13 large companies "controlled leases on another four million acres of coal or oil and gas rights in 1971" and further that this "figure has been growing by an estimated half million acres per year since then." Combining ownership of land and coal rights, Miller found that in 27 of West Virginia's 55 counties, at least 50 percent of the land is owned by out-of-state corporations. (None of West Virginia's 22 counties where outside interests do not own at least 25 percent of the land are believed to have sizable coal reserves.) Some of the nation's largest industrial and energy-producing corporations are among these owners. McAteer divides his list of owners into eight categories: (1) land-holding companies leasing to coal operators or maintaining coal reserves for future use; (2) coal operation coal companies; (3) steel corporations mining coal principally for their own use; (4) railroads hauling coal and leasing coal lands through subsidiaries; (5) trust departments of banks leasing to major coal companies; (6) family holdings or trusts; (7) major lumber corporations owning significant tons of recoverable reserves of coal; and (8) chemical corporations mining coal for their own use.

Table 6-4, "Top Land/Mineral Owners in 14 West Virginia Counties, 1968," summarizes McAteer's study. Table 6-5, "Top Land/Mineral Owners in 51 West Virginia Counties, 1974," summarizes Miller's study. Table 6-6 compares the proportions of corporate ownership in the counties surveyed by the two reports. Both studies document the unusually high levels of absentee ownership in West Virginia. In contrast with Illinois, for example, where absentee land ownership is much less extensive, this amounts to more than 50 percent of the privately held land in 27 West Virginia counties, according to Miller. (See Appendix for listings of land owners in individual West Virginia counties.)

TABLE 6-4

TOP LAND/MINERAL OWNERS IN 14 WEST VIRGINIA COUNTIES, 1968

Owner (Parent Company)	Acres Owned*			
	Fee	Surface	Mineral/ Timber	Total
1. Pocahontas Land Co., Bluefield, WV (Norfolk & Western Railroad)	66,658	233,014	270,720	341,496
2. Consolidation Coal Co., Pittsburgh, PA (Continental Oil Corp., Stamford, CT)	19,707	24,136	239,308	329,801
3. Western Pocahontas Corp., Roanoke, VA (Chessie System, Cleveland, OH)	127,476	6,957	85,139	212,163
4. Georgia Pacific, New York, NY	83,093	83,846	28,907	195,845
5. Eastern Associated Coal Co. (Eastern Gas & Fuel Assoc., Boston, MA)	46,865	2,453	54,457	103,775
6. Island Creek Coal Co., Lexington, KY (Occidental Petroleum, Los Angeles, CA)	13,006	340	90,058	103,405
7. Bethlehem Steel, Bethlehem, PA	46,756	4,236	33,776	84,580
8. Charleston National Bank & Trust, Charleston, WV	23,230	3,959	54,927	82,068
9. Berwind Corporation, Philadelphia, PA	49,758	154	19,196	69,081
10. Union Carbide, New York, NY	42,489	983	18,548	59,617
11. Virginia & Willis Tetrick, Jr., Estate Harrison County, WV	262	--	53,260	53,522
12. Rowland Land Company, Charleston, WV	45,711	309	5,828	51,848
13. Gauley Land Company, Boston, MA	32,166	150	19,524	51,840
14. Beaver Coal Company, Philadelphia, PA	35,598	818	15,248	51,664
15. Cotiga Development Co., Philadelphia, PA	26,509	7,954	16,349	48,919

(Continued)

Table 6-4 continued

Owner (Parent Company)	Acres Owned*			
	Fee	Surface	Mineral/ Timber	Total
16. Cole & Crane Real Estate Trust (c/o Luther Woods, Trustee, Huntington, WV)	39,913	968	2,313	43,194
17. Penn-Virginia Corp., Philadelphia, PA	27,922	4,572	9,500	41,994
18. United States Steel, New York, NY	30,686	2,432	9,662	40,440
19. Federal Coal, Charleston, WV	35,351	836	1,638	37,825
20. Wheeling Dollar Society & Trust, Wheeling, WV	--	2,807	35,817	37,216
21. Dingess-Rum Coal Co., Huntington, WV	31,095	840	5,199	37,135
22. Youngstown Mines, Youngstown, OH (Youngstown Sheet and Tube Co.)	30,624	80	3,118	33,822
23. Southern Land & Dickenson Properties, Charleston, WV	27,705	1,714	932	30,350
24. Youghiogheny & Ohio Company	--	64	28,915	28,979
25. Pittston Company, New York, NY	22,455	949	4,274	27,678
Total (14 counties):	905,026	374,571	1,106,478	2,108,256

*The study included 14 counties: Boone, Logan, Nicholas, Mingo, Kanawha, Wyoming, Fayette, McDowell, Raleigh, Marion, Preston, Monongalia, Harrison, and Mercer. McAteer used an adjustment system in compiling total acreage figures.

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

TABLE 6-5

TOP LAND/MINERAL OWNERS IN 51 WEST VIRGINIA COUNTIES, 1974

Owner (Parent Company)	Acres Owned*
1. Consolidation Coal Co., Pittsburgh, PA (Continental Oil Co., Stamford, CT)	554,097
2. Chessie System, Cleveland, OH	517,636
3. Pocahontas Land Corp., Bluefield, WV (Norfolk and Western Railway, Roanoke, VA)	441,331
4. Georgia Pacific Corp., New York, NY	377,308
5. Columbia Gas System	326,605
6. Westvaco Corp., New York, NY	272,262
7. Eastern Associated Coal Corp. (Eastern Gas & Fuel Assoc., Boston, MA)	263,025
8. Cabot Corporation, Boston, MA	136,995
9. Bethlehem Steel Corporation, Bethlehem, PA	124,632
10. The Pittston Company, New York, NY	
11. Island Creek Coal Co., Lexington, KY (Occidental Petroleum Corp., Los Angeles, CA)	108,215
12. Virginia and Willis G. Tetrick, Jr. (Family Trust Holding)	98,307
13. Pardee Land Company, Philadelphia, PA	96,406
14. Union Carbide Corp., New York, NY	86,397
15. Berwind Corporation, Philadelphia, PA	72,123
16. Westmoreland Coal Company	68,934
17. Hillman Coal and Coke Co., Pittsburgh, PA	67,123
18. Valley Camp Coal Company	64,338
19. Southern Land Company and Dickenson, Charleston, WV	63,249
20. Atlantic-Ritchfield Company	61,036

(Continued)

Table 6-5 continued

Owner (Parent Company)	Acres Owned*
21. Rowland Land Company, Charleston, WV	54,180
22. J.M. Huber Corp., New Jersey	50,458
23. U.S. Steel Corporation, New York, NY	39,749
24. Cotiga Development Co., Philadelphia, PA	39,045
25. Federal Coal Co., Charleston, WV	37,835
26. Amherst Coal Co., Charleston, WV	35,104
27. Coal and Crane Trust (c/o Luther Woods, Huntington, WV)	34,632
28. Youngstown Mines Corp., Youngstown, OH	33,656
29. Dingess-Rum Coal Co., Huntington, WV	30,742
Total:	4,283,470

*These figures were compiled by adding acres listed under fee, surface, and mineral columns in the tax books. This leads to duplication in certain instances when one company or individual owns the surface and another the mineral rights. Portions of 51 counties are owned by these 29 land owners.

Source: Tom Miller, "Who Owns West Virginia?" (Huntington, WV: The Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

TABLE 6-6

PROPORTIONATE CORPORATE OWNERSHIP OF COAL LANDS AND MINERALS IN WEST VIRGINIA, BY COUNTY

County	Corporately Owned Acres (Miller)[a]	% of Total	Corporately Owned Acres (McAteer)[b]	% of Total	Total Acres in County
Barbour	155,958	71	--	--	221,062
Boone	294,612	91	140,181	43	324,480
Braxton	73,078	22	--	--	332,173
Brooke	47,775	81	--	--	59,200
Clay	103,411	47	--	--	221,702
Fayette	251,031	59	165,804	39	426,560
Gilmer	111,356	51	--	--	219,136
Grant	51,170	17	--	--	301,000
Greenbrier	228,382	41	--	--	554,592
Harrison	170,574	64	105,930	40	266,880
Kanawha	134,944	23	72,100	12	584,563
Lewis	52,978	22	--	--	250,464
Lincoln	330,457	100	--	--	279,704
Logan	220,494	76	169,855	58	291,725
McDowell	246,943	72	239,337	70	344,576
Marion	172,514	86	154,180	77	200,672
Marshall	169,580	84	--	--	201,766
Mason	34,268	12	--	--	285,280
Mercer	79,032	29	27,794	10	271,302
Mineral	19,008	9	--	--	211,200
Mingo	177,322	65	190,897	70	271,040
Monongolia	180,183	76	142,210	60	236,044
Nicholas	247,980	68	165,674	39	362,092
Ohio	45,126	65	--	--	69,760
Pleasants	9,409	11	--	--	86,176
Preston	111,967	27	32,823	8	418,483

(Continued)

Table 6-6 Continued

County	Corporately Owned Acres (Miller)[a]	% of Total	Corporately Owned Acres (McAteer)[b]	% of Total	Total Acres in County
Raleigh	271,979	70	211,275	54	390,496
Randolph	180,019	37	--	--	492,133
Taylor	67,425	59	--	--	113,401
Tucker	94,083	53	--	--	176,031
Upshur	170,149	75	--	--	227,110
Wayne	91,089	27	--	--	331,443
Webster	212,322	73	--	--	292,777
Wyoming	388,042	100	279,057	86	324,672
Totals:	5,194,660	54	2,097,117	44	9,639,695

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[a] Tom D. Miller, "Who Owns West Virginia?" (Huntington, WV: The Huntington Publishing Co., 1975). Miller lists two dozen corporations as owners of coal land. Because he adds surface and mineral ownership when these are separately owned, Miller's totals are sometimes greater than total surface acreage. Copyright (c) The Huntington Publishing Co.

[b] J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). McAteer identifies land holdings of top 25 owners. Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

TENNESSEE

A study of coal land ownership in Tennessee was done by Save Our Cumberland Mountains, Inc., in 1973. It reports that a small number of corporations own 32 percent (or 469,605 acres) of the 1,480,320 acres in five eastern Tennessee coal producing counties. The extent of corporate ownership there seems to mirror closely the extent of coal reserves. Thus, 6 of Tennessee's top 25 land owners control 36 percent of the land in Anderson County where, according to the report, "only the northwestern one-third of the county is underlain by coal bearing rock," while in Claiborne County, where only 20 percent of the acres produce coal, 17 percent of the land is corporately held.[6] In the latter case, the American Association, a subsidiary of the Land Foreign and Colonial Securities Company of England, owned 45,331 of the 47,783 corporate acres which are believed to contain 95 percent of the county's coal deposits. The American Association was recently acquired by J.M. Huber Corporation, Edison, New Jersey, a diversified corporation with extensive properties in West Virginia. In sharp contrast with the other states for which data are available, the majority of corporate land owners in Tennessee are in-state firms, although three of the top four are not. (The top 25 owners are listed in Table 6-7.)

VIRGINIA

A survey of six southwestern Virginia counties in 1973 reported that 15 corporations own 602,283 coalfield acres. The largest of these, Pittston Coal Company, owns 41 percent (247,497 acres) of the total. In no other state does a single company own this great a share of total acreage. The top five firms in these Virginia counties own 80 percent of total corporate acreage. (See Table 6-8.)[7]

IMPACTS OF LAND AND MINERAL OWNERSHIP PATTERNS

Variations in land-mineral ownership patterns throughout the ORBES states profoundly influence the ability of subsections within the region to respond to the demand for increased production and to respond to the profound impacts of the social, economic, and environmental effects of coal mining. A recent report points out these influences on coal productivity by stressing two effects of ownership patterns: "(1) The direct effect found in the fact that who controls the land and mineral rights beneath, controls where mining may occur. (2) The indirect effects growing from shortages of land for other social and economic purposes such as housing, industrial development, services, recreation and an adequate tax base."[8]

The multiplicity of social problems associated with high levels of absentee ownership and dependence on extractive industry perhaps was

TABLE 6- 7

TOP 25 LAND AND MINERAL OWNERS OF 5 EAST TENNESSEE COUNTIES

Owner (Parent Company)	Acres
1. Coal Creek Mining & Manufacturing Knoxville, TN	64,199
2. Tennessee Land & Mining, New York, NY	50,940
3. Koppers Company, Pittsburgh, PA	50,771
4. American Association,* London, England	50,661
5. Ford, Fanst, & Cheely, Knoxville, TN	37,206
6. Payne & Baker, Huntsville, TN	37,097
7. Stearns Coal & Lumber, Knoxville, TN	26,390
8. Francis Brothers, LaFollette, TN	23,676
9. Blue Diamond Coal Co., Knoxville, TN	20,131
10. Plateau Properties, Crossville, TN	12,040
11. Hiwassee Land Company, Calhoun, TN	9,795
12. Rivermont Farms	7,587
13. Kyanite Mining Corporation, Dillwyn, VA	5,000
14. Elk Valley Coal, Elk Valley, TN	4,695
15. Lindsay Land Company, Nashville, TN	4,033
16. Russel Land Company, Baisey, TN	3,257
17. Travelers' Insurance Company, Hartford, CT	2,913
18. Clear Fork Mining, Campbell County, TN	2,839
19. Northumberland Corporation, Lawrenceburg, TN	2,612
20. Oneida Wood Company, Oneida, TN	2,602

(Continued)

Table 6-7 continued

Owner (Parent Company)	Acres
21. Rugby Land Company	2,499
22. Swain Lumber Company, Helenwood, TN	2,284
23. Go Ray Realty Company (merged with Koppers Co.)	2,243
24. Consolidation Coal Company, Pittsburgh, PA (Continental Oil Corp., New York, NY)	2,233
25. Walls Property, Inc., Morgan County, TN	2,048
Total:	429,751

*The American Association was purchased by J.M. Huber Corp. of Edison, NJ, a diversified energy and chemicals firm.

Source: John Calhoun Wells, Jr., "Poverty Amidst Riches: Why People Are Poor in Appalachia," Ph.D. dissertation, Rutgers University, 1977. Data reported by Wells are from John Gaventa, *et al.*, *Coal, Taxation, and Tennessee Royalists*, Student Health Coalition, Vanderbilt University, August, 1971.

TABLE 6- 8

15 TOP LAND AND MINERAL OWNERS OF 6 SOUTHWESTERN VIRGINIA COUNTIES

Owner (Parent Company)	Acres
1. Pittston Coal Co., New York, NY	247,497
2. Penn-Virginia Co., Philadelphia, PA	89,518
3. Pocahontas Divisions of Island Creek Coal Co., Lexington, KY (Occidental Petroleum, Los Angeles, CA)	51,843
4. *Virginia Iron, Coal & Coke, Roanoke, VA (Bates Manufacturing Co., Lewiston, ME)	51,109
5. Consolidation Coal Co., Pittsburgh, PA (Continental Oil Corp., Stamford, CT)	37,506
6. National Shawmut Banks of Boston, MA	25,825
7. Georgia Pacific, Portland, OR	22,824
8. Peabody Coal Co., St. Louis, MO (Peabody Holding Co.: Williams Energy, Newmont Mining, and Equitable Life, New York, NY; Bechtel Corp., and Fluor Corp., San Francisco, CA; Boeing Corp., Seattle, WA)	13,259
9. Levisa Fuel Co., Gundy, VA	12,263
10. Swords Creek Mining Corp., Tazewell, VA	10,243
11. Bull Creek Coal Co., Gundy, VA	8,846
12. Buchanan Realty Co., Gundy, VA	7,960
13. Blackwood Land Co., Philadelphia, PA	7,946
14. Coal Mountain Mining Co., Tazewell, VA	7,869
15. Pocahontas Land Co., Bluefield, WV (Norfolk and Western Railway, Roanoke, VA)	7,775
Total:	602,283

Source: John Calhoun Wells, Jr., "Poverty Amidst Riches: Why People Are Poor in Appalachia," Ph.D. dissertation, Rutgers University, 1977. The data reported by Wells from Jane Randolph, Virginia Report, Save Our Cumberland Mountains, Lafollette, Tennessee, October, 1973.

*Recently purchased by American Natural Resources, a foreign energy corporation.

most forcefully brought to national awareness by Harry Caudill in Night Comes to the Cumberlands published in 1962. Describing the history of the Eastern Kentucky coalfields as the biography of a depressed area, Caudill identified many negative features of coal extraction: vast outflows of capital; the disabling effects of boom-bust growth patterns; industrial over-expansion, competition, and unemployment; unsafe and irresponsible mining techniques; governmental corruption; and environmental ruin. Social arrangements suited to the rapid extraction of raw energy materials facilitated the profit-making of land owners and coal-producing firms but not necessarily the healthy, long-term growth of coal producing regions. The Appalachian Regional Commission documented the net outflow of more than $54 million through private investments of "local economic notables" in the Appalachian region.[9] Besides the vast profits that left the region for corporate headquarters elsewhere, local socioeconomic structures designed to support coal production yielded only limited investment opportunities for local wealth as social and economic infrastructures in the mining communities languished.[10]

High levels of poverty exist alongside great mineral wealth. According to the 1970 Census, 44 percent of the population of Eastern Kentucky lived below the poverty level.[11] Though benefited by transfer payments in the 1970s, the most important of which is federal black lung compensation, this population largely has been unaffected by the recent "boom" in Kentucky coal production. Average per capita incomes have risen in coal mining counties, but this population, in conjunction with inadequate taxation, continues to strain severely inadequate social institutions. Literally hundreds of people in high-poverty counties such as Breathitt (56 percent poor) and Martin (56 percent poor) in Kentucky compete for the relatively scarce but high-paying jobs created by coal mining firms. Although often viewed as a peculiarly "Appalachian" phenomenon, this economic pattern is typical instead of American coal mining regions generally, as the now-classic study of Depression-era coal mining in Illinois, Seven Stranded Towns: A Study of an American Depressed Area, shows clearly enough.[12]

Economic setbacks experienced by the coal industry in the 1950s and 1960s, due in part to market losses of home heating and railroad locomotive fuels, seem now to have been reversed with mechanization and strip mining technologies, expansion of coal generated electricity, and the recent perceptions of a national energy shortage. Even before the effects of the latter factor, however, the leasing of coal lands was one of the most profitable business opportunities in the American economy.[13] The entry into the coal industry by large oil producing corporations, along with a national sense of urgency about energy resources, seems to have heightened the profit-making potential of coal mining.[14] Helen Lewis has noted that companies already doing well before the Arab oil embargo experienced a dramatic rise in profits soon afterwards. "For example," she reports, "Island Creek Coal Company produced 22.9 million tons in 1973 and had a net income of $15.8 million, or $.69 per ton. In 1975, two years after the embargo, Island Creek's production was 19.4 million tons while its profits climbed to $173.9 million, or $8.96 per ton."[15]

Absentee ownership of coal reserves means that the economic growth generated by such profits is "uneven;" much of the wealth from mining coal stimulates growth and benefits outside the extractive regions. Coal producing counties benefit from increased wages, and the stimulation to local economic activities these generate. On the other hand, they also face great indirect costs which take the form of increased demands for public services, intensified infrastructural requirements such as roads and schools, and environmental damage. In the mountainous portions of the ORBES region especially, the latter costs are unknown but staggering, as the apparent correlation between strip-mining and increased flood damage illustrates.[16]

Martin County, Kentucky symbolizes the dilemma of such coal-based growth. Of only marginal importance prior to the 1970s, Martin County's coal production soared to nearly 9 million tons annually by 1977 with the increased demand for strip-mined Eastern Kentucky coal. It is now the third largest producer in that region. Its miners "topped the state with annual earnings of $20,900" in 1976. Per capita incomes rose 144 percent from $1,845 to $4,500 from 1971 to 1975. At the same time, however, rapid growth has put tremendous pressure on this rural social structure. The county reportedly "has no sewers and its fledgling water system is unable to meet current demands," flat land for much needed housing is at a minimum, local roads are "broken up under the pressure of traffic from residents, construction companies and coal trucks," and its schools are judged to be inadequate.[17] Fundamentally, the ability of communities such as Martin County to bear the indirect costs of production passed on to the public sector from absentee, private firms, and to insure that some of the wealth which results from heightened production can induce local, long term economic development is an intensely political problem.

Social planners rarely include political power as a variable in their analyses, yet this omission misses "an appreciation of the inescapability of interest and power in determining what solutions will be deemed suitable, what allocations will be thought supportable, and, indeed, what variables will be considered as interesting and salient."[18] There is sufficient evidence to suggest that state and local governments in the ORBES region can claim few successes in planning for and mitigating the social costs of coal mining. The frequent booms and busts of the coal industry--in conjunction with the economic fragility of dependent mining communities and the great power of coal land and mineral owners--seem to have produced traditions of political acquiesence and ineffectiveness. Some political analysts charge that at local levels frequently "banks, courts, school boards, law firms, elected and appointed officials are all integrated into an extensive structure that offers protection and insulation to the industry."[19] Interlocks between local government and coal operators occurred in only four years during the recent Martin County expansion,[20] reproducing a pattern decades old in the older coal producing counties.[21] At the state levels, too, the influence of local operators and absentee owners has been equally great, as the history of industrial regulation and taxation seems to bear out. A study of the West Virginia legislature in 1973 revealed that a majority of the 33 attorneys in the legislature represented the coal industry in their private practices.[22] Table 6-9 presents examples from West Virginia of high level "interlocks" between corporate and public officials in that state. The effects of such influence are clearly revealed by the pattern of property taxation in the ORBES region.

In the 1960s, the tax assessor of Knott County, Kentucky, told a reporter that "the coal companies pretty much set their own assessments . . . . We pretty much have to work with them. We have no system for finding out what they own. Like they tell us they own 50 acres at a certain place when actually they own 500 acres."[23] Though perhaps unusual in its candor, this official's statement may be taken as an example of the ineffectiveness or unwillingness of local level officials in the mining districts to assure adequate taxation of local and absentee coal owners. A 1968 study of property ownership and taxation in West Virginia revealed that the state acquired only 3.3 percent of its total revenues from coal taxation, a total less than its collection of liquor and cigarette taxes. State tax rates on coal had not changed for 23 years.[24] A subsequent study in 1974 showed that at the local level, public schools were the principal losers of this hands-off policy. The report claimed that "West Virginia is losing at least $150 million and perhaps as much as $300 million in property taxes each year "as absentee landlords owning or controlling two-thirds of West Virginia's lands often pay 'as little as two cents per acre in annual property taxes for valuable coal, timber or oil and gas holdings.'"[25]

The same study found, for example, in Wayne County, West Virginia, that coal properties were assessed at an average of only $3.00 per acre, despite a 1966 guideline from the State Tax Department that a more adequate valuation was $94.00 per acre. Similarly, 6,400 acres in Tucker County, West Virginia owned by the Chessie System, one of the state's largest landowners, were assessed in 1970 as residential or farm property. This meant the largest landowner in the county paid only $619.00, or less than ten cents per acre, in taxes. Four years later, its tax bill was dropped to $408.00, or six cents per acre. A citizens' research group in Lincoln County, West Virginia reported that in 1976-77 the Columbia Gas Company payed only twelve cents per acre on its 279,704 acres of mineral rights in the county. Corporate owners possess 96 percent of Lincoln County's mineral rights but pay only 14 percent of the county's property taxes.[26]

The low levels of property assessments in West Virginia were revealed when a Boone County tax official raised assessments from an average of $5.00 per acre to $105.00 per acre over six years prior to 1974, while assessments in adjacent counties, such as Wayne, remained at the same low rates.[27] (For a detailed picture of Kentucky coal

TABLE 6-9

PUBLIC AND PRIVATE "INTERLOCKS" IN WEST VIRGINIA

Business Role	Public Role
President, Amherst Coal Company	Member and former chairman, WV Air Pollution Control Commission
Executive vice president, Continental Oil/Consolidation Coal	Former WV tax commissioner
Executive secretary, WV Coal Assoc.	Former speaker, WV House of Delegates
Former executive secretary, WV Coal Association	Former president, WV Senate
Director of Environmental Conservation, Continental Oil	Former director, WV Dept. of Natural Resources
Distributor for Union Oil; oil and gas entrepreneur	Chairman, WV Senate Committee on Natural Resources
Partner to above as oil and gas entrepreneur	Former president, WV Senate
Director, American Electric Power; director, Consolidation Coal	President, WV Board of Regents; Former speaker, House of Delegates; Former chairman, WV Senate Judiciary Committee; Former Democratic national committeeman
Law partner to above; director First National Bank of Belle, WV	Chairman, WV Senate Judiciary Committee; Senate majority leader; Prime candidate for Senate presidency
Counsel for Humble Oil, American Oil, Monsanto Chemical, and others	Former WV tax commissioner
Organizer and first exec. director of the WV Surface Mining Association	Former chief of WV Dept. of Resources, Reclamation Div.

Source: Paul J. Kaufman, "Absentee Owners of America-II: Poor Rich West Virginia." The New Republic, 167 (December 2, 1972), p. 14. Reprinted by permission of The New Republic, (c)1972, The New Republic, Inc.

property taxation, see data in the Appendix on land ownership in Harlan and Perry Counties.) Perhaps one can discern something of a trend toward greater public pressure for fairer taxation in the ORBES region. A new methodology for coal reappraisal in West Virginia promises to raise an additional $7.6 million in property taxes for 27 counties, some of which, prior to reappraisal, were as low as two cents per acre in McDowell County, one of the nation's leading coal producers.[28] Similarly, officials and citizens in Cambria and Washington Counties, Pennsylvania have begun extensive reassessment programs to correct under-valuation. In Washington County, "the average assessed value per acre of coal in the county has risen only 29 cents this century--from $63.23 to $63.52."[29]

Although such increases are encouraging, a realistic sense of the true value of coal lands is revealed by current litigation in Mingo County, West Virginia. In an unprecedented act, the state government is seeking to condemn 83 acres of land from the Cotiga Development Corporation of Philadelphia to develop housing sites in this county which was devastated by the April 1977 flood. Although the land is currently valued in county land books at only $40.00 per acre, the State of West Virginia is offering the company $1,000.00 per acre. The company, on the other hand, is now claiming its threatened acreage to be worth $4,500.00 per acre.[30]

Recent data collected by the Illinois South Project for its study Who's Mining the Farm suggest some interesting contrasts in property taxation within the ORBES region. Researchers report that in Knox County, Illinois, "Peabody Coal Company and Midland Coal Company paid a total of $334,248.32 in Property Taxes, $98,876.28 in Personal Property Taxes, and $27,612.59 on a railroad spur. The companies' total tax bill of $460,731.11 was not quite 3 percent of the total County Tax Bill extended, yet these two companies together own 7 percent of Knox County's land." Although still not proportional taxation, this level was attributed to the presence of a diversified economy and a strong farm base with political power, as well as to a tradition of tax levels appropriate for good farm lands. In contrast, coal owners in Williamson County, Illinois--a poor agricultural county with limited diversification and greater dependence on coal--paid 5.3 percent of the county's tax bill, or slightly over $10.00 per acre for land and minerals, while owning 11.86 percent of the total county land base.[31] Both figures, however, are in sharp contrast with tax payments by coal owners of as low as two cents per acre as reported for West Virginia. They suggest the importance of economic diversification for local governmental effectiveness and the continuing legacy of political impotence in communities solely dependent on coal mining for their economic existence.

Partly because of the difficulty of taxation at the local level, as well as methodological problems in assessing the value of underground mineral holdings, some states have begun to assess statewide production or "severance" taxes. Although Montana's 26.53 tax rate is the highest in the nation, Kentucky's tax of 31.5 cents per $100 valuation collected

$91 million in 1975-76, a total of nearly twice that for the nine other states in the United States with severance taxes. Within the ORBES region, the only other severance tax program is in Ohio, with a four cents per ton rate, although West Virginia's business tax functions somewhat similarly.[32] Although such revenues are helpful in trying to meet the externalized costs of coal production, even the level collected in Kentucky is grossly insufficient. Recently Kentucky Governor Julian Carroll estimated that $100 million per year for the next decade will be required to maintain an adequate system of "coal-haul" roads. That is, the state's entire coal severance revenues could be spent just to maintain the industry's (public) transportation infrastructure.[33] (Only approximately 15 percent of revenues generated in coal counties in Kentucky are returned to these counties since the severance revenues go directly into the general state treasury.)

Thus, coal land ownership patterns frequently impact negatively on the ability of coal producing regions to increase productivity by inhibiting fair taxation--necessary for sufficient infrastructural development given the high social (or externalized) costs of coal production--as well as by creating competition for alternative but necessary land usages such as housing. Many analysts see the latter as one of the most significant threats to projected increases in coal employment and production, especially in such areas within the ORBES region as West Virginia, where corporations own so much of the total surface acreage. Approximately 37 percent of the existing housing units of Central Appalachia (defined by the Appalachian Regional Commission as 85 counties in Eastern Kentucky, Tennessee, Virginia and West Virginia) are judged inadequate. The HEAD Corporation estimates that by 1980, over 275,000 new housing units will be needed in this region to meet projected housing needs.[34] In the coal producing counties especially, steep terrain and extensive corporate ownership intensify this demand and threaten to inhibit coal industry expansion. The extent to which eastern states will actually be able to increase coal production, and the potential social and economic consequences of such growth, have not received much systematic attention. This is especially true in comparison with impact studies of coal development in the western states. Two recent studies, however, point discouragingly to the same conclusions.[35] Comparisons of impacts of increased production in eastern states suggests that many of the older, single-industry mining communities may not be able to absorb the shock of increased production when new strains that accompany economic and population growth are added to a legacy of unmet externalized costs, inadequate taxation, and insufficient public services. Both studies, however, concluded that economically diversified communities--such as Tuscaloosa County, Alabama; Perry County, Illinois; and certain areas of southeastern Ohio--could absorb increased coal production and employment without severe strain. One of the studies concluded that "the ability of coalfield communities to cope with the various impacts of increasing production is largely dependent upon their course of previous development. The factors most responsible for the communities' relative capabilities can thus be described in terms of the extent to which two economic phenomena--a coal export base and concentrated ownership/control of land and other resources--have dominated all other activities."[36]

One can conclude from this that counties such as McDowell in West Virginia--where nearly 80 percent of its entire population is in mining, 70 percent of its land is corporately owned, and coal properties have traditionally been taxed for as little as two cents an acre--offer little hope for adapting successfully to the sharp production increases which are nonetheless projected.

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CHAPTER VII

COAL OPERATOR ASSOCIATIONS

INTRODUCTION

The organization of coal operator associations developed along with the organization of unions by coal miners around the turn of the century, and thus represents the expansion of forms of industrial organization beyond the small, family operated firm with a few employees. The National Federation of Miners and Mine Laborers was organized in 1885, and in 1886 helped convene the first Interstate Joint Conference of miners and operators from the northern coalfields from Iowa to West Virginia to bargain on wage levels. The Conference collapsed in 1891. The United Mine Workers of America (UMWA) was established in 1890 and bargaining was conducted on a district level through several lean years until a strengthened UMWA forced the reorganization of the Joint Conference in 1898.

The first operators association to be formed was the Illinois Coal Operators' Association in 1897. This was soon followed by the Indiana Bituminous Operators' Association in 1900 and the Southwestern Interstate Coal Operators' Association (representing Kansas and Missouri) in 1903, and many others after 1908, for a total of some 41 operators' associations by 1925. An attempt to organize a national coal operators' association, the American Federation of Coal Operators, was made in 1912 by the operators in the midwestern and western states, but they were not joined by the operators in the eastern states. The National Coal Association was formed in September 1917 when the circumstances of the war prompted the leading operators to centralize administration of matters concerning the industry as a whole.[1]

TYPES OF COAL OPERATOR ASSOCIATIONS

A distinction is commonly made between operator associations dealing with labor relations and the trade associations dealing with broader issues relating to the industry. Labor relations associations bargain collectively with a union and handle arbitration of disputes arising under a contract. Trade associations deal with legislative, regulatory, and public relations matters that face the industry. On the national level today, the National Coal Association (NCA) is an example of a trade association, and the Bituminous Coal Operators Association (BCOA) is an example of a labor relations association. There are also organizations of coal operators concerned with mine safety and others that perform reclamation services.

This report will be concerned primarily with trade associations, as these are the organizations that claim to speak for various segments of the coal industry on a broad range of matters. Secondarily, this report will discuss labor relations associations. It will not deal with safety institutes or reclamation associations that are concerned solely with actual reclamation services.

The organization of coal operators and companies on the national, state, and sub-state district levels tends to parallel the structural division of the industry into oligopoly and competitive sectors. On the national level, the oligopoly sector companies tend to be members of two trade associations: National Coal Association (NCA) and the American Mining Congress (AMC), a broader group representing metal mining as well as coal mining companies. The Bituminous Coal Operators' Association (BCOA) is the labor relations association that represents the oligopoly sector and allied companies in contracting with the UMWA. Competitive sector coal companies tend to be organized into two distinct types of associations according to whether they are involved in underground or surface mining. Deep mining companies in the competitive sector tend to be members of the National Independent Coal Operators' Association (NICOA) and its state or district affiliates. A fledgling trade association which draws its membership primarily from the "independent" companies engaged in surface mining is the Mining and Reclamation Council of America (MARC). MARC includes members from some of the Surface Mining and Reclamation Associations established on the state level in the Appalachian coal mining states.

Again, this analysis is not completely tidy. The coal mining states with a relatively small number of companies and/or a predominant surface mining industry may have only one trade association on the state level, as is the case in Illinois, Indiana, and Ohio. In West Virginia, where 80 percent of the coal is deep mined, the oligopoly sector is predominantly in underground mining and its association, the West Virginia Coal Association (WVCA) is exclusively concerned with deep mining. A separate association, the West Virginia Surface Mining and Reclamation Association (WVSMRA) represents oligopoly and competitive sector companies engaged in surface mining. Competitive sector deep mine operators tend to be members of the State NICOA chapter. A similar pattern of organizations is found in Pennsylvania. Kentucky also had a similar pattern of organizations, but its Surface Mining and Reclamation Association has largely disbanded and the members joined either the Kentucky Coal Association (KCA), which tends to draw membership from the larger companies, or the various district affiliates of the Kentucky Independent Coal Producers' Association (KICPA), which is in turn an affiliate of NICOA.

NATIONAL COAL OPERATOR ASSOCIATIONS

There are five national associations that represent various groups of coal operators, all of which include members from six states in the ORBES region. They are the National Coal Association, the American Mining

Congress, the Bituminous Coal Operators' Association, the National Independent Coal Operators' Association, and the Mining and Reclamation Council of America.[2]

National Coal Association (NCA)

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The NCA is the leading trade association of the major coal companies. The NCA represents its members before Congress and federal agencies; provides informational, legal, and technical services; and serves as a public relations arm of the industry. Like most coal associations, the NCA has two categories of membership, producer members and associate members. There were 74 producer members in early 1978 (see Table 7-1) and a larger number of associate members from coal sellers, rail and water carriers, consulting firms, equipment suppliers, utilities, and other energy companies. The NCA counts as members 9 of the top 15 producers in 1976, including the five leading affiliated producing groups: Peabody, Consol, AMAX, Island Creek, and Pittston. Other leading producers in the top 15 in 1976 who are NCA members include Bethlehem, North American, Old Ben, and Westmoreland. NCA members produce approximately half the coal mined in the United States.

The NCA publishes a biennial handbook of industry data, Coal Facts. More detailed information is contained in its annual publications, Coal Data, Steam Electric Plant Factors, International Coal, and Coal Traffic Annual. The NCA also makes available to the public by subscription the weekly newsletter "Coal News," the semi-monthly report "Coal Export Review," and the monthly report "Steam Electric Market Analysis." Members also receive several periodic newsletters including the "Washington Memo," "The Letter of the Law," "Mine to Market," and the "Weekly Statistical Summary."

Organizations affiliated with the NCA include the Coal Exporters Association of the United States, Inc., and Bituminous Coal Research, Inc., which is concerned with coal production and gasification research.

American Mining Congress (AMC)

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TABLE 7-1

PRODUCING MEMBERS OF THE NATIONAL COAL ASSOCIATION, 1978

Coal Producers

Ada Resources
Alabama By-Products Corp.
Amax Coal Co.
Amherst Coal Co.
Barnes & Tucker Co.
Bear Coal Co.
Big Horn Coal Co.
Blue Diamond Coal Co.
Calvert & Youngblood Coal Co.
Cannelton Industries, Inc.
Carbon Fuel Co.
Carter Oil Co.
Clear Creek Coal Co.
CoalARBED, Inc.
Coastal States Energy Co.
Consolidation Coal Co.
Drummond Co.
Eastern Associated Coal Corp.
Energy Fuels Corp.
Falcon Coal Co.
Freeman United Coal Mining Corp.
Gamble Coals, Inc.
W. R. Grace
Hawley Fuel Corp.
Imperial Colliery Co.
Industrial Fuels Corp.
Inter-Mountain Coals, Inc.
Island Creek Coal Co.
Kemmerer Coal Co.
Lovilia Coal Co.
Mapco, Inc.
A. T. Massey Coal Co.
Jno. McCall Coal Co.
Midland Coal Co.
Monterey Coal Co.
Moshannon Falls Mining Co.
New River Co.
North American Coal Corp.
Oglebay Norton Co.
Oklahoma Natural Gas Co.
Old Ben Coal Co.
Peabody Coal Co.
P & L Coal Corp.
Permac, Inc.
Pittsburg & Midway Coal Mining Co.
Pittston Co.
Race Fork Coal Corp.
Reitz Coal Co.
Rochester & Pittsburgh Coal Co.
Ruhr-American Coal Co.
Sahara Coal Co.
Slab Fork Coal Co.
South-East Coal Co.
Stearns Mining Co.
Sunoco Energy Development
Tennessee Consolidated Coal Co.
Turner Elkhorn Mining Co.
United Pocahontas Coal Co.
Usibelli Coal Mine, Inc.
Valley Camp Coal Co.
Virginia By-Product Coal Co.
Western Slope Carbon, Inc.
Westmoreland Coal Co.
Youghiogheny & Ohio Coal Co.
Zapata Coal Corp.
Zeigler Coal Co.

Captive Coal Producers

American Electric Power Service Corp.
Bethlehem Steel Corp.
FMC Corp.
Jones & Laughlin Steel Corp.
Kaiser Steel Corp.
Lykes Resources
National Steel Corp.
Pennsylvania Mines Corp.

Source: National Coal Association, February 1978.

The AMC, also headquartered in Washington, D.C., is a trade association with membership partially overlapping that of the NCA. The AMC is an older organization, founded in 1897 (twenty years before the NCA in 1917), and as its name suggests, the AMC represents a wide range of companies in the metal mining industry as well as the coal industry. The AMC has some 250 producer members, and another 250 members from such constituencies as mining equipment manufacturers, banks, and engineering companies. Of the 40 major mining companies represented on the AMC board of directors, at least 20 are coal producers (see Table 7-2). These include not only the nine major coal producers listed above as the leading NCA members, but also U.S. Steel, the sixth leading coal producer in 1976. Utah International, another major coal producer (18th in rank in 1976), is another AMC member that does not belong to the NCA. When Kennecott Copper, an AMC member, was forced by the Federal Trade Commission to divest itself of Peabody Coal, the consortium of companies that bought Peabody included Newmont Mining, another AMC member.

The AMC has a coal policy council composed of a representative of each of its coal producing companies. Since this group overlaps with the leading groups in the NCA, the policies and positions of the two organizations concerning the coal industry almost always coincide. The AMC generally defers to the NCA as the leading voice for matters relating exclusively to the coal industry. The yearly AMC coal convention, interestingly, is a much bigger production than the NCA's annual meeting.

The AMC publishes the monthly Mining Congress Journal, and for its members issues a weekly "News Bulletin" for company presidents, a bi-weekly "News Bulletin" with a wider membership distribution, and monthly "Legislative Bulletin" and "Tax Bulletin."

Bituminous Coal Operators' Association (BCOA)

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The BCOA is a labor relations association that represents the major portion of the coal industry that negotiates with the UMWA. The BCOA was organized in 1950 as a means of stabilizing the industry through agreement among the northern coal operators, the captive coal operators, and the UMWA. The BCOA members consist both of individual companies and regional associations of companies (see Table 7-3). Any member with an annual production of over a million tons has a seat on the BCOA board of directors. A BCOA official estimates that their board has about a two-thirds overlap with the NCA board. The most important BCOA member not a member of the NCA is U.S. Steel. The leading industry negotiators for the BCOA in the 1977-78 UMWA

TABLE 7-2

COMPANIES REPRESENTED ON THE BOARD OF DIRECTORS OF THE AMERICAN MINING CONGRESS, 1977

Gulf Resources & Chemical Corp.*
Duval Corp.
Consolidation Coal Co.*
ASARCO, Inc.*
Island Creek Coal Co.*
North American Coal Corp.*
United States Steel Corp.*
Old Ben Coal Co.*
Pittston Co.*
Allis-Chalmers Corp.
Freeport Minerals Co.
St. Joe Minerals Corp.*
Oglebay Norton Co.*
Texasgulf, Inc.
Medusa Corp.
Homestake Mining Co.
Pickands Mather & Co.*
Lone Star Industries, Inc.
Inspiration Consolidated Copper Co.
Union Carbide Corp.*
Westmoreland Coal Co.
International Minerals & Chemical Corp.*
Utah International Inc.*
Ideal Basic Industries, Inc.
Hecla Mining Co.
AMAX, Inc.*
Newmont Mining Corp.*
Dresser Industries, Inc.
National Mine Service Co.
Kerr-McGee Corp.
Kennecott Copper Corp.
Phelps Dodge Corp.
Peabody Coal Co.*
The Anaconda Co.
Rochester & Pittsburgh Coal Co.*
Hanna Mining Co.
Cleveland-Cliffs Iron Co.
Bethlehem Steel Corp.*
U.S. Borax & Chemical Corp.
Aluminum Company of America

*Coal producing companies or companies with coal producing subsidiaries.

Source: American Mining Congress, Declaration of Policy, Sept. 11, 1977.

TABLE 7-3

MEMBERS OF THE BITUMINOUS COAL OPERATORS ASSOCIATION, 1978

- Alabama By-Products Corp.
- AMAX Coal Company
  - Gibraltar Coal Corp.
  - Yankeetown Dock Corp.
- American Coal Co.
- Armco, Inc. (West Va. Coal Oper.)
- Barnes & Tucker Co.
- Beckley Coal Mining Co.
- Beth-Elkhorn Corp.
- Bethlehem Mines Corp.
- Bishop Coal Co.
- CF&I Steel Corp.
- Cannelton Industries, Inc.
  - Maple Meadow Mining Co., Inc.
- Cedar Coal Co.
- Central Appalachian Coal Co.
- Central Coal Co.
- Central Ohio Coal Co.
- CoalARBED, Inc.
  - Red Ash Sales Co., Inc.
  - Delaware Fuel Co.
  - Ottaway Mining Corp.
  - Huff Energy
  - Hull Coal Co.
- Consolidation Coal Co.
  - Eastern Region
  - Northern West Va. Region
  - Southern Appalachia Region
  - Midwestern Region
- Drummond Coal Co.
- Duquesne Light Co.
- Eastern Associated Coal Corp.
  - Affinity Mining Co.
  - Sterling Smokeless Coal Co.
- Emerald Mines Corp.
- Freeman United Coal Mining Co.
- G.M.& W. Coal Co.
- Gateway Coal Co.
- Harmar Coal Co.
- Hawley Coal Mining Corp.
- Hawley Fuel Corp.
  - Kitchekan Fuel Corp.
  - Peter White Coal Mining Corp.
- Helvetia Coal Co.
- Inland Steel Coal Co.
- Iselin Preparation Co.
- Island Creek Coal Co.
  - Beatrice Pocahontas Co.
  - National Coal Mining Co.
  - Virginia Pocahontas Co.
  - V.P.-5 Mining Co.
- Itmann Coal Co.
- Jim Walter Resources, Inc.
- Jones & Laughlin Steel Corp.
- Kaiser Steel Corp.
- Kanawha Coal Co.
- Keystone Coal Mining Corp.
- Mathies Coal Co.
- Middle States Coal Co.
- Midland Coal Co.
- Monterey Coal Co.
- National Mines Corp.
- Nemacolin Mines Corp.
- The North American Coal Corp.
  - Central Division
  - Eastern Division
  - The Florence Mining Co.
  - The Helen Mining Co.
  - The Nacco Mining Co.
  - Quarto Mining Co.
- North River Energy Corp.
- Old Ben Coal Co.
- Olga Coal Co.
- Omar Mining Co.
  - M. & B. Coal Co.
  - Piney Creek Coal Co.
  - Raleigh Six Coal Co.
  - Robinson-Phillips Coal Co.
    - Simron Fuel Co.
    - Winston Coal Co.
  - Royalty Smokeless Coal Co.
    - Leslie Coal Co.
    - Trace Fork Coal Co.
    - Tug River Coal Co.
  - Russell Fork Coal Co.
    - Rebecca Coal Co.
    - Rita Coal Co.
  - T.C.H. Coal Co.
  - Virginia Crews Coal Co.
- Peabody Coal Co.
- Penn Pocahontas Coal Co.
- Pennsylvania Mines Corp.

(Continued)

TABLE 7-3 (continued)

- Pikeville Coal Co.
- The Pittston Coal Group
  - Amigo Smokeless Coal Co.
  - Badger Coal Co., Inc.
  - Buffalo Mining Co.
  - Clinchfield Coal Co.
  - Eastern Coal Corp.
  - Elkay Mining Co.
  - High Spur Coal Co.
  - Jewell Ridge Coal Corp.
  - Kentland-Eklhorn Coal Corp.
  - Ranger Fuel Corp.
  - Sewell Coal Co.
  - The Snap Creek Coal Co.
- Reliable Coal Corp.
- Republic Steel Corp.
- Robert Coal Co.
- Saginaw Mining Co.
- Scotts Branch Co.
- Semet-Solvay Div., Allied Chem. Corp.
- Slab Fork Coal Co.
- Southern Appalachian Coal Co.
- Southern Ohio Coal Co.
- Southwestern Illinois Coal Corp.
- Sugarloaf Mining Co.
- United States Steel Corp.
- Upshur Coals Corp.
- The Valley Camp Coal Co.
- Valley Camp of Utah
- W-P Coal Co.
- Westmoreland Coal Co.
  - Hampton Division
  - Imperial Smokeless Division
  - Stonega Division
  - Winding Gulf Division
- Windsor Power House Coal Co.
- The Youghiogheny & Ohio Coal Co.
- The Youngstown Mines Corp.

- Central Pennsylvania Coal Operators' Assoc.
  - Appollo Corp.
  - Armstrong Energy Services, Inc.
  - Hiysota Fuel, Inc.
  - J & D Mining Co.
  - Jandy Coal Co.
  - Mark Mining Co., Inc.
  - Mark Mining Co. No. 2, Inc.
  - North Somerset Mining Co., Inc.
  - Reitz Coal Co.

- Highlands Coal Assoc., Inc.
  - B & D Coal Co.
  - Caroline Coal Co., Inc.
  - Cole & White, Inc.
  - Dotson Coal Co., Inc.
  - Elm Coal Corp.
  - Kentucky Central Coal Corp.
  - L & M Coal Co., Inc.
  - Lance Hall Coals, Inc.
  - Micheal Coal Co.
  - Rebel Coal Co., Inc.
  - Rebel Coal Co. II, Inc.
  - Sando Services, Inc.
  - Sherwood Coal Co., Inc.
  - Thelma Coal Co., Inc.
  - Wedgewood Coal Co., Inc.
  - Western Coal Corp.

- Northern West Virginia Coal Assoc.
  - King Knob Coal Co.
  - South Union Coal Co.

- Southern Coal Producers' Assoc.
  - Big Sandy-Elkhorn Coal Operators' Association
    - Kentucky Carbon Corp.
    - Sovereign Coal Corp.
  - Kanawha Coal Operators' Assoc.
    - Alma Coal Corp.
    - Capital Fuels, Inc.
    - Carbon Fuel Co.
    - Coal Management, Inc.
    - Eagle Coal & Dock Co.
    - Ellis Creek Coal Co.
    - F & F Mining Corp.
    - Fletcher Mining Co., Inc.
    - Hawks Nest Mining Co.
    - Hope Mining Co.
    - Imperial Colliery Co.
    - Kessler Coals, Inc.
    - King Powellton Mining, Inc.
    - Milburn Colliery Co.
    - Oglebay Norton Co. (Ceredo Dock)
    - Pratt Mining Co.
    - Princess Susan Coal Co.
    - Riverton Coal Co.
    - Transport, Inc.
    - Zapata Coal Corp.
  - Logan Coal Operators' Assoc.
    - Allburn Coal Co.
    - Belva Coal Co.

(Continued)

TABLE 7-3 (continued)

- Southern Coal Producers' (cont'd)
  - Logan Coal Operators' (cont'd)
    - Bonnie Coal Co.
    - Caroline Coal Co.
    - Crystal Alma Coal Corp.
    - Crystalee Coal Co.
    - Energy Development Corp.
    - Guyan Eagle Mining Co.
    - Max Ann Coal Co.
    - P.M. Charles Coal Co.
    - Pond Creek Mining Co.
    - Powellton Co.
    - Rocky Hollow Coal Co.
    - Royal Coal Co.
    - Smith Brothers Construction
    - Sprouse Creek Coal Co.
    - Stevan Coal Co.
    - Sycamore Mining Co.
    - United Pocahontas Coal Co.
    - Wedgewood Coal Co.
  - Southern Virginias Coal Assoc.
    - Ashland Mining Corp.
    - Clintwood Mining Corp.
    - Harman Mining Corp.
  - Individual Members
    - Eagle Mining Industries, Inc.
    - Majestic Mining, Inc.
    - The New River Co.
    - Union Carbide Corp. (Ferroalloys Division)
- Western Pennsylvania Coal Operators' Assoc.
  - Aloe Coal Co.
  - Bologna Coal Co.
  - Bren-Mar Minerals
  - Canterbury Coal Co.
  - Carpentertown Coal & Coke Co.
  - Crescent Hills Coal Co., Inc.
  - Dunkard Creek Coal Co.
  - Eola Coal Corp.
  - Hawk Contracting, Inc.
  - King Know Coal Co.
  - Leechburg Mining Co.
  - Luzerne Coal Corp.
  - Maysville Coal Co.
  - Midway Coal Co.
  - Penn Allegh Coal Co., Inc.
  - South Union Coal Co., Inc.
  - Tremont Mining Co.

Source: National Bituminous Coal Wage Agreement of 1978, pp. 167-71.

contract negotiations were representatives of Peabody, Consol, Island Creek, and U.S. Steel (the first, second, fourth and sixth largest producers of coal respectively). The BCOA negotiates for about 80 percent of the coal produced under UMWA contracts. A few eastern companies negotiate individually with the UMWA or simply sign the national contract without representation in BCOA. The union negotiates separate agreements with western surface mining companies.

The BCOA has about 70 affiliated operating groups as company members, and has another 90 or so companies represented through the Central Pennsylvania Coal Producers' Association, the Western Pennsylvania Coal Operators' Association, the Northern West Virginia Coal Association, the Highlands Coal Association, and the Southern Coal Producers' Association (SCPA). The SCPA is composed of four regional associations: the Big Sandy-Elkhorn Coal Operators' Association, the Kanawha Coal Operators' Association, the Logan Coal Operators' Association, and the Southern Virginias Coal Association.

Official lists of the membership of the NCA and BCOA and the board of directors of the AMC are available. It is possible to compare these with a list of coal companies ranked by production to show which major producers are members of which associations. This comparison is presented in Table 7-4.

National Independent Coal Operators' Association (NICOA)

Main Office:
Louis H. Hunter, Executive Vice-President
1514 Front Street
P.O. Box 354
Richlands, Virginia 24641
703-963-9011

Washington, D.C. Office:
John L. Kilcullen, General Counsel
1800 M Street, N.W.
Washington, D.C. 20006
202-296-5700

NICOA has a main office in Richlands, Virginia, and utilizes the services of a Washington attorney for representation in the Capitol. NICOA was founded in 1960 by small mine owners attempting to operate as non-union companies. The independents have grown in amount of production since the early 1960s, and their major concern has shifted from the UMWA to federal and state regulation. Although NICOA still styles itself "The voice of the small independent coal operator in Washington," it now

TABLE 7-4

THE SIXTY LARGEST COAL PRODUCERS IN 1976 AND THEIR COAL ASSOCIATION MEMBERSHIPS AT THE NATIONAL LEVEL

Rank	Company	Tonnage (Millions)	AMC Board (1977)	NCA (1978)	BCOA (1978)
1	Peabody	70.6	M	M	M
2	Consolidation	55.9	M	M	M
3	AMAX	23.1	M	M	M
4	Island Creek	17.6	M	M	M
5	Pittston	17.1	M	M	M
6	U.S. Steel	16.0	M		M
7	Bethlehem	14.1	M	M	M
8	Arch Mineral	13.6			M
9	Pacific Power & Light	12.1			
10	North American	10.7	M	M	M
11	American Electric Power Grp.	10.5		M	M
12	Old Ben	9.5	M	M	M
13	Western Energy	9.3			
14	Westmoreland	8.1	M	M	M
15	Peter Kiewit Sons	8.0			
16	Eastern Associated	8.0		M	M
17	Pittsburg & Midway	7.9	M		
18	Utah International	6.5	M		
19	Freeman United	6.1		M	M
20	Industrial Generating	6.0			
21	Rochester & Pittsburgh	5.8	M	M	M
22	Falcon Coal	5.2		M	
23	Zeigler Coal	5.2		M	
24	C & K Coal	5.0	M**		
25	Jewell Coal & Coke	4.4			
26	Alabama By-Products	4.2		M	M
27	Kemmerer Coal	4.1		M	
28	Knife River	4.1			
29	Westmoreland Resources	4.1			
30	Mapco	4.0		M	
31	Valley Camp	3.6		M	M
32	Republic Steel	3.2			M
33	H.E. Drummond	3.2		M	M
34	Energy Fuels	3.0		M	
35	Jones & Lughtlin	2.9		M	M
36	Pennsylvania Mines	2.9		M	M
37	R & F Coal	2.9	M		
38	Monterey Coal	2.8		M	M
39	Midland Coal	2.8		M	M
40	Virginia Iron Coal & Coke	2.7		M	
41	National Mines	2.6		M	M

(Continued)

TABLE 7-4 (continued)

Rank	Company	Tonnage (Millions)	AMC Board (1977)	NCA (1978)	BCOA (1978)
42	Armco Steel	2.4			M
43	Carbon Fuel	2.3		M	M
44	Eastover Mining				
45	Cannelton Coal	2.2		M	M
46	Lykes Resources, Inc.	2.2		M	M
47	Benjamin Coal Co.	2.2			
48	Sovereign Coal	2.1			M
49	Youghiogheny & Ohio	2.1		M	M
50	Baukol-Noonan, Inc.				
51	Washington Irrigation & Development	2.0			
52	Ohio Coal & Construction	2.0			
53	Blue Diamond	2.0		M	
54	Sahara Coal	2.0		M	
55	Barnes & Tucker	2.0		M	M
56	Kaneb Services	2.0			
57	Inland Steel	1.9			M
58	A.T. Massey/St. Joe Minerals	1.7	M	M	
59	Zapata Coal Corp.	1.7		M	M
60	Kaiser Steel Corp.	1.7		M	M

**Owned by Gulf Resources & Chemical Corp., an AMC Board Member in 1977.

Source: Keystone, U.S. Coal Production by Company, 1976; Tables 7-1, 7-2 and 7-3. Copyright (c) McGraw-Hill, Inc.

describes its constituency as "operators of small and medium-sized coal mines throughout the various mining regions of the United States."

NICOA claims some 1,000 members. It publishes a monthly newspaper, the National Independent Coal Leader, with a circulation of 13,000. Although there are members in ten states, the vast majority of the membership is located in northern and central Appalachia. Claimed membership by states is roughly 500 in Kentucky, 200 in Pennsylvania, 150 in Virginia, 85 in West Virginia, 35 in Tennessee, 15 in Ohio, 5 in Alabama, 4 in Iowa, and 3 in Colorado and Utah. Members produce roughly 50 million tons of coal annually, less than 10 percent of national production. NICOA has regional vice-presidents for Kentucky, Pennsylvania, Virginia, and West Virginia, and hopes to build state chapters in each of these states. NICOA membership is open to all independent operators, but some 70 percent of the members' production is by deep mining. Consequently, most of the organization's effort has gone toward influencing legislation and regulations concerning mine health and safety, the major areas affecting underground mine operators. NICOA has not devoted major attention to surface mining legislation and regulation.

NICOA's plan to expand its influence by developing active state and district affiliates has been developed by Cloyd McDowell, the current NICOA president, who is also president of the Kentucky Independent Coal Producers Association and past president of the Harlan County Coal Operators Association. Few, if any, of NICOA's members have membership in the national associations that represent the oligopoly sector and its allied companies, although there is a little overlap on the state level.

Mining and Reclamation Council of America (MARC)

Ben E. Lusk, President
Mining and Reclamation Council of America
1000 16th Street, N.W.
Washington, D.C. 20036
202-296-6693

Field Office:
830 One Valley Square
Charleston, West Virginia 25301
304-345-3000

MARC is a new organization, established in 1977, which represents surface mining operations at the national level. Its Washington, D.C. office opened in January 1978. MARC's president is Ben Lusk, who formerly headed the West Virginia Surface Mining and Reclamation Association (WVSMRA). The membership base of MARC is built upon Lusk's associates from the WVSMRA and surface operators located primarily in Pennsylvania, Ohio, and Alabama. As of January 1979, there were some 130 producer members, several of which, including Ashland Coal, the Drummond Company, and Peabody Coal, are also NCA members. Also affiliated loosely with

MARC are 21 state coal associations that represent independent and surface producers.

Although MARC aspires to represent all surface mining companies, including the giants of the industry, it began by representing primarily the segment of the competitive sector engaged in surface mining. The major national companies have been slow in joining MARC. This may suggest they have little dissatisfaction with the job done by the NCA and the AMC in representing their interests in surface mining on the national level. MARC has a sizable constituency in the small and medium-sized surface operators who are not members of the NCA or AMC. The organization has received little support from Virginia operators thus far. Some of the disfavor in which these operators hold MARC may derive from resentment at the support which Lusk as president of the WVSMRA gave to the federal Surface Mining Control and Reclamation Act, which became law in 1977. Representing a broader constituency, MARC has vigorously contested the regulations issued under the Act by the Office of Surface Mining and has filed a lawsuit to block implementation of the regulations.

ASSOCIATIONS IN THE ORBES STATES

Each of the ORBES states has a trade association that represents the major operators in the state. Surface operators have separate trade associations in Pennsylvania and West Virginia. Independent operators have separate state and district associations in Kentucky. State or district labor relations associations are found in Illinois, Kentucky, Ohio, Pennsylvania, and West Virginia.

ILLINOIS

Illinois Coal Association (ICA)

Joseph S. Spivey, President
Illinois Coal Association
117 S. 5th Street
Springfield, Illinois 62701
217-538-2092

The ICA is the only trade association of coal operators in Illinois. It has ten members, all of whom produce around two million tons or more a year. All but one or two member companies have to be considered part of the national or oligopoly sector of the industry. Most are owned by larger companies. The ICA claims its members produce 97 percent of the coal mined in Illinois. The ICA is concerned with lobbying, regulation, and public relations on the state level. It publishes a semi-monthly newsletter, the "Coal Dispatch," for its membership. The Midwest Coal Producers Institute, listed separately in some catalogues of coal operator associations at the same address as the ICA, is essentially a paper organization at present, occasionally used as a committee vehicle by the ICA. Most ICA members have contracts with the UMWA.

Coal Producers' Association of Illinois (CPAI)

Louis S. Weber, President
Coal Producers' Association of Illinois
314 E. Adams Street
Springfield, Illinois 62701
217-528-3401

The CPAI is a labor relations association that contracts with the Progressive Mine Workers of America (PMWA). Currently, only two companies in Illinois contract with the PMWA, Sahara Coal and Robertson and Associates, accounting for some 690 active miners. The CPAI manages the Welfare Funds and the Retirement and Pension Funds for these companies. There are some two to three hundred pensioners.

INDIANA

Indiana Coal Association (ICA)

William A. Beeman, Executive Vice-President
Indiana Coal Association
632 Cherry Street
Terre Haute, Indiana 47808
812-232-2008

The ICA is the only trade association of coal operators in Indiana. It has 25 producer members and 30 associates. Each producing member has a representative on the board of directors. Of the three major coal companies in Indiana, only Peabody is presently a member of ICA. AMAX and Old Ben have not been members since a reorganization of the association in 1975 that opened the ICA to the small independent companies of the state. The ICA's primary activities include lobbying and public relations. ICA staff report that AMAX is quite active on its own in governmental affairs in the state, while Old Ben gives little attention to the state legislature or regulatory activities. Most member companies do not have contracts with the UMWA. One or two have contracts with the PMWA.

KENTUCKY

Kentucky Coal Association (KCA)

Tom Duncan, President
Kentucky Coal Association
1733 Harrodsburg Road
P.O. Box 4242
Lexington, Kentucky 40504
606-277-5784

The KCA was organized in its present form around 1960. Its first executive director was Fred Bullard, who had held a similar position with the Hazard Coal Operators Association. Bullard managed to pull together for the first time coal operators from eastern and western Kentucky. The KCA membership presently includes some 50 producing companies and another 50 associate members from banks and landowning, insurance, and mining equipment companies. KCA members produce approximately 50 percent of Kentucky's coal production. All but one of the top 13 producers in Kentucky are members, and these are all firms in the oligopoly sector, national coal producers or captives of the steel or utility industries: Peabody, Island Creek, AMAX, Falcon, Mapco, U.S. Steel, Duke Power, A.T. Massey, Bethlehem, Blue Diamond, Ashland, and Pittston. Pittsburgh and Midway, owned by Gulf Oil, the fifth largest producer in the state, is not a KCA member.

The KCA has recruited a substantial number of medium-sized companies that are locally based and closely held. The reasons for this are both historical and structural. The companies with which Bullard had ties when he moved from the Hazard COA included South-East, Blue Diamond, and the cluster of companies later sold to Falcon in 1970. Although these companies operated without UMWA contracts from the 1960s on, they kept their membership in the KCA and their identification with the national companies. The KCA thus became recognized as friendly to both union and non-union, large and medium-sized companies.

One structural reason for the broader base of the KCA includes the lesser degree of concentration of coal land ownership by the national companies than in West Virginia or Illinois. In Kentucky, although there are substantial holdings of coal lands by national corporations and landowning companies, ownership is more widely dispersed and thus gives more space for the independent coal operators. Another structural reason for the broader base of the KCA is that surface mining has become quite extensive in Kentucky. Many of the major national companies in Kentucky are engaged in surface as well as deep mining (a circumstance fostered in part by the conditions in western Kentucky which have long supported a major surface mining industry).

Hazard Coal Operators' Association (HCOA)

William B. Sturgill, President
Hazard Coal Operators' Association
Suite 7D, Citizens Bank Square
Lexington, Kentucky 40507
606-254-3394

Although it is a separate organization, the HCOA is similar in some respects to a district affiliate of the KCA. Organized in 1931, the association from the mid-1930s through the 1950s functioned as a labor relations association handling issues arising under UMWA contracts. The group also had a strong interest in railroad tariffs and other freight rate and rail traffic issues as well as mine safety and general public relations. The Hazard operators dropped their UMWA contracts in the early 1960s, and the association now has around eight members who are also members of the KCA; these include Falcon, Blue Diamond, South-East, and Sturgill's Golden Oak. Some of these are on the national level members of NCA; none are members of NICOA or its affiliates. The organization continues a safety program and a concern for rail traffic through its membership in the Property Owners Committee, housed in NCA's Coal Building in Washington, D.C.

Kentucky Independent Coal Producers' Association (KICPA)

Ken Hart, Secretary-Treasurer
Kentucky Independent Coal Producers' Association
(also Editor and Publisher, Kentucky Coal Journal)
115 Tanglewood Drive
Frankfort, Kentucky 40601
502-223-1619

The KICPA is a coalition of NICOA district affiliates within Kentucky. The group was organized as the Kentucky Independent Coal Coalition in late 1975 for a collective lobbying effort in the 1976 Kentucky General Assembly. Members of the coalition included Coal Operators and Associates (primarily Pike County), the Harlan County Coal Operators Association, the Letcher-Knott-Perry Independent Coal Operators Association, and the Kentucky-Tennessee Independent Coal Operators Association (primarily Bell, Whitley, Knox, Laurel, and McCreary Counties). This coalition represented the first time the independent operators had spoken through a single organization for a Kentucky legislative session. After the session, Cloyd McDowell, then president of the Harlan County COA, worked to make the group a permanent, state-level NICOA affiliate, the KICPA. McDowell is also president of the KICPA. The Kentucky-Tennessee ICOA group withdrew from the KICPA in 1977. Early in 1978 a western Kentucky affiliate was organized, the West Kentucky Coal Producers' Association. The KICPA maintains an office in Frankfort headed by Ken Hart, who edits the Associations's monthly newspaper, the Kentucky Coal Journal.

Coal Operators and Associates (CO&A)

Everett Brown, Executive Director
Coal Operators and Associates
315 Hopking Building
Pikeville, Kentucky 41501
606-432-2161

CO&A has been the largest, most affluent, and most visible of the district organizations of independent operators. Located in Pikeville, the organization was founded in 1957 as the Pike County Independent Coal Operators Association and led by Robert Holcomb until April 1976. The group affiliated with NICOA at the time of its founding in 1960, but soon broke away and remained an independent district organization under the name of Coal Operators and Associates.

Holcomb retired in 1976, and Burlin Coleman, president of the Pikeville National Bank, has been president of CO&A ever since. In 1975 CO&A opened a Frankfort office and began publishing a monthly newspaper, the Kentucky Coal Journal, edited by Ken Hart. When CO&A rejoined the NICOA and aligned itself with the KICPA, the newspaper was adopted as the voice of the KICPA. The Pikeville office staff, headed by Everett Brown, provides field assistance to the membership of some 300 companies, concentrated largely in Pike County. Most of the members run non-union operations, although a few have UMWA contracts and at least one member has a contract with the Southern Labor Union (SLU).

Harlan County Coal Operators' Association (HCCOA)

James Baker, President
Harlan County Operators' Association
Box 230
Harlan, Kentucky 40831
606-573-2656

Founded in 1917, the HCCOA is the oldest surviving coal operators' association in Kentucky. During the 1930s, the organization was noted for its intransigent opposition to the UMWA. After the Harlan operators signed contracts with the UMWA in 1939, the HCCOA functioned as a labor relations organization during the 1940s and 1950s. After 1962 most of the HCCOA members had dropped their UMWA contracts, and the organization became a NICOA affiliate. Cloyd McDowell began working with the HCCOA in 1950, and held the position of president from 1958 through 1978, a title he has also held with NICOA since 1971 and the KICPA since 1976. James Baker succeeded McDowell as president and full-time staff worker for the HCCOA in January 1979. The HCCOA currently has 28 producer members; the captive mines in the county (U.S. Steel, Wisconsin Steel) are not members. Three HCCOA members have contracts with the UMWA, and eight have contracts with the SLU.

Knott-Letcher-Perry Independent Coal Operators' Association (KLPICOA)

Norb Bentley, Executive Secretary
Knott-Letcher-Perry Independent Coal Operators' Association
P.O. Box 550
Whitesburg, Kentucky 41858
606-633-4412

The KLPICOA was formed during the early 1960s, following the founding of NICOA. The organization has an office in Whitesburg with an executive secretary who works with the membership in the field. The current president of the association is Jack Fitz of Bulan in Perry County. KLPICOA has functioned primarily as a district chapter of NICOA, and has had little visibility on its own, unlike CO&A or the HCCOA. Claims of its membership vary from 80 to 200, with 175 being a figure for the circulation of its monthly newsletter. KLPICOA has no overlapping members with the Hazard COA, which draws from the same territory.

West Kentucky Coal Operators' Association (WKCOA)

James Daniel, President
West Kentucky Coal Operators' Association
Triangle D Coal Company
Route 1, Box 210-A
Dawson Springs, Kentucky 42408
502-797-5651

The WKCOA was organized in the fall of 1977 and is the fourth KICPA affiliate in Kentucky. It is affiliating with NICOA. There are 40 member companies producing a total of some 4 million tons annually. There is no field office or staff at present. The group represents the smaller operators. All members but one operate surface mines, and only two have contracts with the UMWA.

Kentucky-Tennessee Coal Operators' Association (KTCOA)

David O. Smith, Executive Vice-President
Kentucky-Tennessee Coal Operators' Association
1001 Circle Drive
Corbin, Kentucky 40701
606-528-9481

The KTCOA was organized in November 1975. The group began by affiliating with CO&A of Pikeville, but then decided to form a separate association that would be a part of the state-wide coalition through the KICPA. The KTCOA withdrew from the KICPA in 1977 and has since gone its own way. The KTCOA has 18 producer members and some 125 associates including banks and equipment companies. The group includes both underground and surface mining companies, but surface mining predominates (which may have led to a difference of interest with the predominantly underground NICOA groups). The KTCOA membership is drawn primarily from Bell, Whitley, Knox, Laurel, and McCreary Counties, although the organization has staked out a 12-county area as its turf. The group includes members who live in border counties in Tennessee but mine in Kentucky, hence the somewhat misleading organizational name. Most members are in the small mine category, producing from 75 to 150 thousand tons a year. Located in the strongly Republican fifth Congressional District, the KTCOA members may have little inclination to follow the recent KICPA strategy of supporting Democratic Party officials at the state level. The current KTCOA president is Cecil Gibbs of Middlesboro.

Clay County Independent Coal Operators and Associates (CCICO&A)

W. F. Ravenel, President
Clay County Independent Coal Operators & Associates
Route 7, Box 495-A
Manchester, Kentucky 40962
606-598-6640

The CCICO&A was organized in November 1978, and represents 35 producing members. Most members are surface producers, and are concerned with the new Office of Surface Mining's regulations. Affiliation with the KICPA is under consideration.

Leslie-Clay Coal Producers' Association (LCCPA)

McKinley Morgan
Leslie-Clay Coal Producers' Association
P.O. Box 1230
Hyden, Kentucky 41749
606-672-2800

The LCCPA was organized in 1976, and represents 15 small producers based in Leslie County. The group has no staff and is not affiliated with NICOA or the KICPA.

Kentucky Surface Mining and Reclamation Association (KSMRA)

The KSMRA was organized in the early 1960s and was most active around the peak of grassroots opposition to strip mining in the late 1960s. Ironically, in view of its subsequent decline, the KSMRA was the model for the presently thriving Surface Mining and Reclamation Associations in West Virginia and Virginia. The organization had about 100 members at its peak, and was centered in Pike County with an office in Pikeville. Following the coal boom and the decline in the active opposition to surface mining by 1974, the membership began to loose interest in the organization. A small office managed by executive secretary Ethel Goff was finally closed in 1978. Many of the former members are active in CO&A or the KCA.

Big Sandy-Elkhorn Coal Operators' Association (BSECOA)

Harry C. Campbell, President
Big Sandy-Elkhorn Coal Operators' Association
2205 Lakeside Drive
Lexington, Kentucky 40502
606-269-5648

The BSECOA is a labor relations association affiliated with the BCOA. It was founded in 1933. There are presently nine members, all signatories to the UMWA contract. The BSECOA has few functions at present other than representing its members in the BCOA negotiations.

Highlands Coal Association (HCA)

Wendell Knight, Executive Director
Highlands Coal Association
P. O. Box 551
Paintsville, Kentucky 41240
606-789-6148

Prestonsburg Field Office:
606-886-2701

The HCA was organized in January 1976 to serve as a labor relations association. There are presently 16 members, 12 in Kentucky and 4 in West Virginia. Kentucky members are mostly from Martin County, with some in Floyd County. West Virginia members are from Mingo and Logan Counties. Eight more West Virginia companies are expected to join shortly. The member companies mine around 3 million tons annually. All are companies mining minerals owned by Island Creek Coal Company. There are signatories to the UMWA contract because they are under contract with Island Creek, a leading company in the BCOA. The HCA provides arbitration services to its members.

OHIO

Ohio Mining and Reclamation Association (OMRA)

Neal S. Tostenson, Executive Vice-President
Ohio Mining and Reclamation Association
41 S. High Street, Suite 204
Columbus, Ohio 43215
614-228-6336

Field Office:
John Shupert, Field Director
Ohio Mining and Reclamation Association
129 N. Tenth Street
Cambridge, Ohio 43725
614-432-5645

OMRA is the only trade association of coal operators in Ohio. It has around 100 members which account for two-thirds of the coal mined in the state. Members among the major companies include Peabody, Consol, and the American Electric Power subsidiary coal producers; North American is not a member. The board of directors is composed of 16 persons representing certain member companies. OMRA is active in lobbying and public relations and provides technical assistance to its members through its field office. Some member companies have contracts with the UMWA. OMRA publishes a monthly bulletin for its members.

Ohio Valley Coal Operators' Association (OVCOA)

Leonard J. Pnakovich, President
Ohio Valley Coal Operators' Association
209 Lew Port Building
St. Clairsville, Ohio 43950
614-695-2214

The OVCOA is a labor relations organization that arbitrates disputes arising under its members' contracts with the UMWA. Four major companies are members: North American, Valley Camp, Youghiogheny & Ohio, and Saginaw. The new Muskingum Mines Joint Venture will also be represented. The territory of the OVCOA is UMWA District 6, which includes all of Ohio and the northern West Virginia panhandle. Pnakovich was a former president of UMWA District 31 in northern West Virginia, and was a UMWA International vice-president under the Boyle administration.

PENNSYLVANIA

Keystone Bituminous Coal Association (KBCA)

Stephen McCann, President
Keystone Bituminous Coal Association
311 Towne House
Harrisburg, Pennsylvania 17102
717-236-5901

The KBCA was formed in 1965 by the Pennsylvania steel companies' coal producing captives joining together with the members of two BCOA-affiliated labor relations associations, the Western Pennsylvania Coal Operators' Association (WPCOA), and the Central Pennsylvania Coal Producers' Association (CPCPA). The KBCA is the trade association of the major companies in the oligopoly sector of the industry. A substantial majority of the coal produced by the KBCA members is deep mined, and the major focus of the organization is thus underground mining. There are 30 members, including the six largest producers in the state in 1976 (Bethlehem, Rochester & Pittsburgh, U.S. Steel, Consol, Jones & Laughlin, and Republic Steel). In 1975, seventeen of the top twenty-five producers in the state were KBCA members. Presently the WPCOA is formally associated with the KBCA, but the CPCPA is not. The organization publishes an annual facts book, Coal in Pennsylvania, and a periodic newsletter for its members.

Pennsylvania Coal Mining Association (PCMA)

Franklin H. Mohney, President
Pennsylvania Coal Mining Association
240 N. Third Street, Suite 207-210
Harrisburg, Pennsylvania 17101
717-233-7909

The PCMA is the trade association for the independent surface mining companies of the state. There are 150 members, who produce some 60 to 65 percent of the surface production of coal in the state. Only two member companies produce over two million tons a year. The Anthracite Institute affiliated with or merged into the PCMA in 1973, so the organization represents both anthracite and bituminous surface mine operators. There are 28 members on the PCMA board of directors, 20 of whom are chosen by a method that allocates four members to each of five regions from which the membership is drawn. The membership includes both companies with UMWA contracts and non-union firms; the greater percentage of members is non-union. Approximately 75 percent of the surface production in the state is estimated to be non-union. The PCMA publishes a monthly bulletin for its membership.

Central Pennsylvania Coal Producers' Association (CPCPA)

Emmett T. Lang, President
Central Pennsylvania Coal Producers' Association
Suite 219, Masonic Building
Ebensburg, Pennsylvania 15931
814-472-6840

The CPCPA is primarily a labor relations association that represents 19 members in negotiations through the BCOA and with disputes that develop under contracts with the UMWA. Members produce nearly 14 million tons annually. The organization is no longer formally associated with the KBCA, but most of its members are. This office also serves the three small companies which compose the Eastern Bituminous Coal Association.

Western Pennsylvania Coal Operators' Association (WPCOA)

Joseph F. Bonetto, Executive Vice-President
Western Pennsylvania Coal Operators' Association
715 Oliver Building
Pittsburgh, Pennsylvania 15222
412-261-2446

The WPCOA is primarily a labor relations association that represents its members in negotiations with the UMWA through the BCOA and in arbitrating disputes arising under UMWA contracts. The organization also is active in lobbying in Harrisburg, a job for which Bonetto is admirably suited, having spent 12 years in the Pennsylvania General Assembly. There are 24 members, whose production totals around five million tons annually. Approximately half this production is surface and half underground. Most members are also members of the KBCA.

Western Pennsylvania Surface Coal Mine Operators' Association (WPSCMOA)

Robert Shostak, General Counsel
Western Pennsylvania Surface Coal Mine Operators' Association
2532 Oliver Building
Pittsburgh, Pennsylvania 15222
412-765-2666

WPSCMOA is a newly formed organization of mostly small, non-union, surface mine operators in western Pennsylvania. There are 15 members, whose annual production ranges from 90 thousand tons to a million tons. About half are members of the state-wide surface mining trade association, the PCMA. The WPSCMOA sees itself as a more vocal advocate of the small surface mine operator, and lobbies on behalf of its members in Harrisburg and Washington, D.C.

Pennsylvania Chapter of NICOA

Ed Mears, President
Pennsylvania Chapter of NICOA
Box 118
Dixonville, Pennsylvania 15734
412-254-4471

The Pennsylvania Chapter of NICOA was organized around 1972, and has 15 producer members, mostly in the medium-sized range. They account for over 5 million tons annually. Some 70 percent of members' production is surface, and only 30 percent underground. Some 5 percent is produced under contract with the UMWA, and 10 percent under contract with the SLU. Members are drawn from Armstrong, Cambria, Clearfield, Indiana, and Jefferson Counties. The organization lobbies at both the state and national capitols.

WEST VIRGINIA

West Virginia Coal Association (WVCA)

Edwin K. Wiles, President
West Virginia Coal Association
1340 One Valley Square
Charleston, West Virginia 25301
304-342-4153

The WVCA was founded in 1915, and is the major trade association for the underground coal mining industry in the state. Presently, the WVCA has 32 members that produce over 80 percent of the underground coal production in the state; all operate under UMWA contracts. The membership of the WVCA includes 16 of the top 20 coal producers in the state. The exceptions are Semet Solvay, a subsidiary of Allied Chemical, which was the 17th largest producer in the state in 1976, and three companies engaged only in surface mining which ranked 15th, 16th, and 20th in state coal production. Consol is the largest producer by far in West Virginia, with a total of 24.5 million tons in 1976, some 22 percent of total production in the state and nearly three times the tonnage of the next largest company (Eastern Associated, with 7.5 million tons). This production gives Consol a dominant voice in the WVCA. The WVCA publishes a number of public information booklets on coal mining, including the annual West Virginia Coal Data, a quarterly public newsletter, Coal Scoop, and a weekly newsletter for its membership.

West Virginia Surface Mining and Reclamation Association (WVSMRA)

Ben Greene, President
West Virginia Surface Mining and Reclamation Association
1624 Kanawha Boulevard, East
Charleston, West Virginia 25311
304-346-5318

Organized in 1966, the WVSMRA represents 120 producing members which account for 80 to 85 percent of the 20 million tons of coal surface mined annually in the state. The organization was founded when the movement for a strong surface mining regulation and reclamation law developed in West Virginia in the late 1960s.

The WVSMRA has brought together companies in both the competitive and oligopoly sectors. This alliance was brought about in part by the real threat presented by the movement to abolish strip mining in West Virginia; this movement had a grassroots base coupled with support from important political figures which had no counterpart, for example, in Kentucky. In addition, the almost exclusive concern of the WVCA for issues related to underground mining brought the national companies with some surface mines in addition to their underground operations into the WVSMRA along with the smaller independent operators. Most members operate under UMWA contracts. The political situation in West Virginia made the association very conscious of public relations and the importance of an image of concern for the environment. The association publishes a quarterly magazine, Green Lands. Its current president is Ben Greene, the former chief of the reclamation division of the state's department of natural resources.

Kanawha Coal Operators' Association (KCOA)

Quin Morton III, Executive Secretary
(also President, Southern Coal Producers' Association)
Kanawha Coal Operators' Association
809 Kanawha Valley Building
Charleston, West Virginia 25301
304-342-3195

The KCOA is a labor relations association that represents its members in arbitrating disputes arising under contracts with the UMWA. It has 34 members, which produce a total of 12 million tons of coal annually. The membership is drawn from Kanawha, Boone, Raleigh, Fayette, Nicholas, and Lincoln Counties. Morton also serves as staff to the Southern Coal Producers' Association, an association of district BCOA affiliates in West Virginia and Kentucky.

Logan Coal Operators' Association (LCOA)

Melvin Triolo, Secretary and Treasurer
Logan Coal Operators' Association
501 White and Browning Building
P.O. Box 240
Logan, West Virginia 25601
304-752-2440

The LCOA is primarily a labor relations association that represents its members under contract with the UMWA. It has 24 members, which produce a total of 6 million tons of coal annually. The organization covers Logan and Mingo Counties.

Other BCOA Affiliates in West Virginia

The BCOA lists two organizations, the Southern Virginias Coal Association in Bluefield and the Northern West Virginia Coal Association in Fairmont, that exist on paper but are largely inactive as organizations. They will probably go out of existence.

West Virginia Chapter of NICOA

C. W. Blankenship, President
Paul Miller, Secretary-Treasurer
West Virginia Chapter of NICOA
Drawer P
North Fork, West Virginia 24868
304-862-3982

The West Virginia Chapter of NICOA was organized in early 1977 from operators in southern West Virginia who were members of NICOA. The chapter has 34 member companies which produce some 2.5 million tons annually. All production is underground, and most is metallurgical grade coal. Most of the "met" coal is exported to Europe or Japan. Members are located in McDowell, Wyoming, Mercer, and Logan Counties. Member concerns in the past have centered largely on safety regulation of deep mines by MESA in Washington. The group expects to be directing more attention to lobbying in the state capitol in Charleston in the future.

ASSOCIATIONS IN THE NON-ORBES EASTERN STATES

Coal operator associations in the remaining coal producing eastern states not in the ORBES region (Alabama, Maryland, Tennessee and Virginia) follow the same patterns identified for the ORBES states. In Alabama and Virginia, which have substantial production from both underground and surface mines, there are associations which represent the large underground producers in the oligopoly sector and associations which represent the surface producers, both large and small. In Virginia, there is also a regional association that represents the small underground producers. Maryland and Tennessee producers are mostly small and medium-sized independent companies in the competitive sector and are predominantly engaged in surface mining. These two states have associations that represent the independent mining companies.

ALABAMA

Alabama Mining Institute (AMI)

Don Wasson, President
Alabama Mining Institute
1810 John A. Hand Building
Birmingham, Alabama 35203
205-252-2139

The AMI is the trade association that represents the oligopoly sector of the coal industry in Alabama. Organized as the Alabama Coal Operators' Association in 1908, the AMI adopted its present name in 1921. There are 14 member companies, producing some 8 million tons annually, approximately 30 percent of the coal produced in the state. All members operate under contracts with the UMWA. Member companies include U.S. Steel, Alabama By-Products, Jim Walter Resources, Drummond, Mead, ABC, and Cobb Bankhead. As most member companies are also members of the NCA and BCOA on the national level, the AMI is largely concerned with lobbying activities on the state level.

Alabama Surface Mining Reclamation Council (ASMRC)

William Kelce, President
Alabama Surface Mining Reclamation Council
318 Hamilton Building
244 Goodwin Crest
Birmingham, Alabama 25209
205-942-5660

The ASMAC is the trade association that represents the surface mining companies in Alabama. Formed in 1972, the ASMRC has 36 producer members that account for some 80 percent of the surface coal production in the state. Anticipated production of member companies for the fiscal year 1978-79 is 12 million tons. Member companies include such large producers as Drummond as well as many smaller companies. A large proportion of the tonnage produced by member companies is mined under contracts with the UMWA. The ASMRC is active on both the state and national levels. A number of member companies and the ASMRC staff are active with the Mining and Reclamation Council of America (MARC) in Washington, D.C.

MARYLAND

Western Maryland Coal Owners and Operators Association (WMCOOA)

Matthew Skidmore, President
Western Maryland Coal Owners and
Operators Association
Win-More Mining and Construction
Midlothian, Maryland 21543
301-689-9144

The WMCOOA represents 40 companies which produce around 80 percent of the 3 million tons of coal mined annually in Maryland's Allegheny and Garrett Counties. About 95 percent of this coal is surface mined. The largest producing member company is Phillips Coal, a Kaneb subsidiary. Other members are small independent companies. All are non-union. The association has no staff.

TENNESSEE

Facts About Coal in Tennessee (FACT)

Bill Vaughn, Executive Director
Facts About Coal in Tennessee
5833 Clinton Highway
Knoxville, Tennessee 37912
615-688-6080

Organized in 1974, FACT has some 40 producer members and 50 associates. Members produce 30 to 40 percent of Tennessee's annual production of 10 million tons of coal. Most FACT members are small mines; 80 percent are surface mining operations. FACT thus represents primarily mine operators in the competitive sector of the industry. The two national companies in Tennessee (Consol, and Tennessee Consolidation owned by St. Joe Minerals) are not members. No FACT members have UMWA contracts; a few have SLU contracts. Member companies also lobby at the state level as the "Independent Coal Operators' Association." FACT publishes a monthly newspaper, "The FACT Sheet."

VIRGINIA

Virginia Coal Association (VCA)

Blaine Carter, President
Virginia Coal Association
700 Building, Suite 1506
Richmond, Virginia 23219
804-643-6697

The VCA represents the oligopoly sector of the coal industry in Virginia. It has eight member companies, including NCA members Pittston, Island Creek, Westmoreland, and Permac. Virginia Iron, Coal and Coke, United Coal, Harmon Coal, and Central Coal are also members. These companies account for a majority of the 25 million tons of coal produced annually by underground mining in the state. Some surface production is also represented through the member companies. Most of the VCA activity consists of lobbying before the Virginia General Assembly.

Virginia Surface Mining and Reclamation Association (VSMRA)

B. V. Cooper, Executive Director
Virginia Surface Mining and Reclamation Council
Regency Building
P.O. Box 776
Big Stone Gap, Virginia 24219
703-523-4200

Founded in 1971, the VSMRA represents 90 producer members who account for some 75 percent of the 14 million tons of the annula surface coal production of the state. Although the association membership consists mostly of small and medium-sized independent companies in the competitive sector, two national companies (Pittston and Westmoreland) are also members, as are the large independent producers Virginia Iron, Coal and Coke, and United Coal. Most of the association's activity is directed toward technical assistance to members on complying with reclamation regulations. Lobbying activities have been more directed toward Washington, D.C. than toward Richmond. The major concern of VSMRA has been the Federal Surface Mining and Reclamation Act. The VSMRA played a major role in organizing the convoy of coal trucks that drove to Washington to urge a Presidential veto of the federal surface mining act in 1975.

Tri-County Coal Operators' Association (TRI-COA)

Pete Marozzi, President
Tri-County Coal Operators' Association
c/o United Coal Companies
P.O. Box 901
Grundy, Virginia 24614
703-935-7521

TRI-COA is a NICOA district affiliate covering Buchanon, Russell, and Tazwell Counties in Virginia. There are around 25 producer members, predominantly engaged in underground mining. Most members are independent, non-union producers. The association is quite active locally. On paper, there is a NICOA affiliate for adjoining Dickenson and Wise Counties, headed by Arcus Adkins of Clintwood, but the group appears to be largely inactive.

ASSOCIATIONS IN THE WESTERN STATES

We have not obtained any information about trade associations of coal operators in the western states. The following list is offered without further analysis.

Hardy Hall, Secretary
Arkansas/Oklahoma Coal
Operators' Assoc.
P.O. Box 186
Fort Smith, Arkansas 72902

William Budd, Exec. Vice-Pres.
Wyoming Mining Association
310 West Midwest Avenue
Casper, Wyoming 82601

Paul Rattle, Manager
Utah Mining Association
825 Kearns Building
Salt Lake City, Utah 84104

George W. Mackie, Jr., Pres.
Southwestern Interstate Coal
Operators Assoc.
320 North Locust Street
Pittsburg, Kansas 66762

William F. Darmitzel, Exec. Dir.
New Mexico Mining Association
P.O. Box 597
Sante Fe, New Mexico 87501

James D. Mockler, Exec. Dir.
Montana Coal Council
2301 Colonial Drive
Helena, Montana 59601

David Cole, Manager
Colorado Mining Association
402 Majestic Building
209 16th Street
Denver, Colorado 80202

B.R. Noe, President
Colorado & New Mexico Coal
Operators Assoc.
P.O. Box 1394
Englewood, Colorado 80110

John Smith, President
North Dakota Lignite Council
P.O. Box 2034
Bismarck, North Dakota 58501

REFERENCES

[1] Arthur Suffern, The Coal Miners' Struggle for Industrial Status (New York: Macmillan, 1926), pp. 11-72, 169-79.

[2] For information on national coal operator associations, see the Keystone Coal Industry Manual, 1978, pp. 432-444; the list of state and regional associations on pp. 445-6 is incomplete. For a reasonably current listing of regional and state coal operator associations, see the National Coal Association's Coal Facts 1978-1979, p. 50.

CHAPTER VIII

UNIONS IN THE COAL INDUSTRY

The coal miner has labored in the world's most dangerous industrial occupation, under conditions which have often been oppressive as well as hazardous. Each coalfield has its own history of violence: the Molly Maguires in Pennsylvania anthracite in the 1870s;[1] the miners' insurrections over the convict leasing system in eastern Tennessee in 1891-1893;[2] the Alabama coal strikes of 1894, 1908, and 1920-21;[3] the Ludlow Massacre in Colorado in 1912;[4] the West Virginia coal wars of the 1910s and 1920s;[5] "Bloody Williamson" County in southern Illinois in 1922;[6] and in Kentucky, the strikes of 1931-32 in Harlan and Bell Counties,[7] the early 1960s around Perry County,[8] Brookside in 1973,[9] Stearns since 1976, and Jericol since 1978. In the early years of coal mining in the United States, the miner could find a relative prosperity only under unusual circumstances, as in western Maryland.[10]

Coal mining communities share many of the characteristics of single-industry communities: relative geographical isolation, few employment alternatives, sharp economic and political conflict, high occupational and class consciousness, dangerous work requiring mutual aid, distinct family lifestyles, and solidarity in the work group and occupational community. Communities built around coal mining typically have lacked many of the amenities of more diversified urban areas.[11] Coal miners often constitute a distinct occupational subculture which carries work interests and associations into leisure activities.[12] The result is a tendency toward labor solidarity and aggressiveness, as Gaston Rimlinger notes:

> Whether mine workers are isolated geographically or merely segregated in "miners' colonies" consisting of company houses or adjacent to larger towns, their location and occupation make them a distinct group of which they themselves, as well as outsiders, are fully conscious. They tend to be strongly aware, one would guess much more so than other workers, that they share a common fate. Their work and recreation habits make them feel different from other workers, even where they have frequent contact with them. They have their own feasts and tragedies, their own institutions and traditions. The organization of their work relies on a system of "mutual trust and dependence" and on a "highly developed sense of collective responsibility." Close kinship ties among them, their proverbial faithfulness to the trade, and a certain pride of craftsmanship further

> reinforce their sense of separateness and their cohesion. The combination of all these factors is usually enough to give them a strong feeling of common destiny, which they can translate into united action.[13]

It is not surprising, then, that coal miners struggled to build a militant industrial union in the United States.

THE DEVELOPMENT OF COAL MINERS' UNIONS IN THE UNITED STATES

The first coal miners' union organized in the United States was the "Bates Union" in the anthracite fields of Schuylkill County, Pennsylvania, formed by John Bates, an English miner, in 1848; the organization fell apart in 1850. Other miners of British descent, led by Daniel Weaver, organized the Miners Association in the bituminous fields of St. Clair County, Illinois, in 1861. Later known as the American Miners' Association, this union established branches in Indiana, Ohio, and Pennsylvania, but failed to survive the economic recession following the conclusion of the Civil War and had little effect after 1867.[14] In 1868 the anthracite workers in Schuylkill County founded the Workingmen's Benevolent Association, an organization that was torn by ethnic rivalries and crushed by the repression of its members along with the Molly Maguires in the mid-1870s by the Reading Railroad's Coal and Iron Police and Pinkerton detectives.[15] A second national miners' union, the Miners' National Association, was founded in 1873; its president, John Siney, was also a leader in the Workingmen's Benevolent Association. The National Association was also broken by 1876. As the Knights of Labor gained strength in the 1880s, the National Federation of Miners and Mine Laborers was formed in 1885 by members of the Knights who sought a more practical form of organization. In 1886 the Federation secured the first interstate wage agreement from operators from Iowa to Pennsylvania. Also in that year, Samuel Gompers founded the American Federation of Labor (AFL) in opposition to the Knights of Labor, and the AFL chartered the Federation as its official union of miners. The Knights countered by organizing Assembly 135 in a structure parallel to the Federation. Within a couple of years it was apparent to leaders of both groups that continued rivalry would be disastrous to the miners' cause, and discussions were begun that led to the unity convention that founded the United Mine Workers of America in January 1890.[16]

THE RISE OF THE UNITED MINE WORKERS OF AMERICA

By 1896 the UMWA had little money in its treasury and only some 10,000 members. The new union president, Michael Rachford, called a national coal miners' strike in 1897 and won contracts that increased membership to 33,000. By the 1899 convention when John Mitchell was elected president of the UMWA, membership included 82,000 bituminous miners, but only 9,000 anthracite miners. Mitchell set out to organize the anthracite fields and succeeded; by 1901 the union had some 232,000 members in the soft and hard coalfields. Again in 1902 Mitchell won a major strike in the anthracite fields, defeating George "divine right" Baer, president of the Reading Railroad, after intervention by President Theodore Roosevelt. The ranks of union miners continued to swell during the next two decades, reaching 377,000 in 1914 and climbing to a peak of 485,000 in 1922.[17]

John L. Lewis, the figure who was to dominate the UMWA for forty years, became acting president of the union in 1919 upon the resignation of president Frank Hayes. The fates of Lewis and the union were so closely bound together that an official biographer could write, "John L. Lewis and the UMWA are 'One and Indissoluble,'" as the union's motto proclaims.[18] Lewis was elected to the presidency in 1920, and held the office until his retirement in 1960. But before Lewis was to have his period of great victories in the 1930s, he presided over a drastic decline in the fortunes of the union during the 1920s.

The increased demand for coal during the years of the first World War had prompted a substantial expansion of productive capacity in the coal industry, in part through the entry of a large number of small producers. The decline in demand for coal following the war led to a sharp decline in the price of coal after 1922; the average price per ton of bituminous coal dropped from $3.02 in 1922 to $2.68 in 1923, $2.20 in 1924, $2.04 in 1925, and continued to decline to a low of $1.31 in 1932. Employment declined from 705,000 in 1923 to 594,000 in 1926 and 1927, then dropped to 503,000 in 1929 and 406,000 in 1932.[19] The UMWA signed the ill-fated "Jacksonville agreement" with the coal operators of the Central Competitive Field in February 1924, but the terms of the contract were repudiated by many of these same operators not long after.

The primary destabilizing force in the industry was the expansion of production from the Southern Appalachian coalfields. With the opening of the southern West Virginia fields, production in that state increased from 21 million tons in 1900 to 60 million in 1911 and 90 million in 1920. Although national production declined from 568 million tons in 1920 to 518 million in 1927, production in West Virginia increased over the same period from 90 million to 145 million tons, an increase from 15 percent to 28 percent of production nationally. Eastern Kentucky was able to increase production from 8.6 million tons in 1912 to 47.5 million tons in 1928, moving from 2 percent to nearly 10 percent of national production.[20] The unionized northern operators of the "Central Competitive Field" felt increasing competition from the non-union southern operators; disputes over freight rates, particularly from the southern fields to the "lake cargo coal trade," played an important part in the efforts of southern operators to compete in northern markets.[21] The UMWA's drive to organize the southern West Virginia fields in the early 1920s failed under harsh repression, and competition from these fields forced many northern operators to abandon their contract with the union.

In the face of this decline in the industry, Lewis' policy of "no backward step" in wages was a valiant posture but a futile strategy. By 1929 the membership in the UMWA may have been as low as 84,000. Union contracts remained in effect only in parts of Illinois and Indiana, and scattered other locations. During the 1920s Lewis responded to criticism within the union by using the broad powers of the presidency to suspend leaders of the opposition and place districts in receivership. Although the UMWA endorsed nationalization of the mines in its 1919 convention and confirmed this position in succeeding conventions, Lewis continued to hope for market solutions or stabilization of the industry through agreements between the union and the operators, a point he emphasized in his 1925 book, The Miners' Fight for American Standards.[22]

Lewis was determined to control competition in the industry; if the operators could not organize into one block, he would see that the industry was stabilized. Lewis was clear that a decent life for coal miners would depend on increasing their productivity through mechanization and elimination of marginally competitive firms that could continue in business only by paying lower, non-union wages. Many of Lewis' ideas for the consolidation of coal producers into fewer and larger units were developed together with UMWA economic advisor W. Jett Lauck. Their model for the ideal situation in the bituminous coal industry appears to have been the structure of the anthracite industry, which was controlled by a small number of companies. The oligopoly structure in anthracite facilitated a stable relationship with the UMWA and a firm base of membership for the union. Lewis and Lauck hoped to stabilize the bituminous industry by restricting competition and consolidating production into more efficient units.[23] By 1925 Lewis had established the program which he would finally be in a position to carry out 25 years later with the Bituminous Coal Wage Agreement of 1950. First he had to find the means to organize the southern fields and prevent price-cutting in the industry.

The major challenge to Lewis' leadership within the union came from John Brophy in the officers' election of 1926, which was won by Lewis amid charges of fraud from Brophy.[24] Dual unions organized to challenge the UMWA included the National Miners' Union, in existence from 1928 to 1933 and led by the Communist Party,[25] and the Progressive Mine Workers of America, organized in 1932 with a base in Illinois, which will be described later in this chapter. One of the few bright spots for the UMWA in the late 1920s was the signing of a contract with the Rocky Mountain Fuel Company of Colorado in 1928, in the wake of a strike led by the International Workers of the World, which began a long and cordial relationship between Rocky Mountain Fuel's president, Josephine Roche, and the UMWA.[26]

Lewis gradually came to adopt a legislative strategy to improve the position of the union. Court injunctions against the union, based on the Sherman Anti-Trust Act of 1890, "yellow dog" labor contracts which forbade membership in the UMWA, and company unions pioneered by John D.

Rockefeller following the Ludlow Massacre[27] all restricted the union's ability to organize. The election of Franklin D. Roosevelt in 1932 presented Lewis with a prime opportunity to enact his legislative program which had failed in the Congress during the 1920s. Lewis was largely responsible for the enactment of Section 7(a) of the National Industrial Recovery Act (NIRA) of 1933. One provision of this famous section gave workers the right to organize and engage in collective bargaining through leaders of their own choosing. Another provision outlawed the hated "yellow dog" contract. Grasping the potential of this law and the spirit of the times as no other labor leader, Lewis threw the remaining meager resources of the UMWA into a massive organizing drive, proclaiming "The President wants you to join the union." Miners rushed to join or rejoin the union, and by 1934 Lewis had 400,000 organized miners in the UMWA. The Appalachian Joint Wage Agreement was signed in September 1933 with the intervention of National Recovery Administration (NRA) officials, and became the largest single wage contract to that time. Although the U.S. Supreme Court struck down the NIRA in the case of Schechter v. U.S. in 1935, the NRA coal code was replaced by provisions of the Guffey-Snyder bill, the Bituminous Coal Conservation Act of 1935, and the provisions protecting the rights of workers became part of the Wagner bill, the National Labor Relations Act of 1935.[28] In 1936 the Supreme Court ruled the 1935 Coal Act invalid; the Bituminous Coal Act of 1937, also known as the Guffey-Vinson Act, was then enacted. With the increase in demand resulting from the Second World War, the minimum price provisions of the act were no longer of any urgency, and the legislation was allowed to expire in 1943.[29]

The first Appalachian Joint Wage Agreement of 1933 included both northern and southern operators.[30] There was a 40 cents a day differential between the two fields, with a daily wage of $4.60 in the North and $4.20 in the South (well below the $7.50 of the 1923 Jacksonville agreement). The captive mine operators later signed contracts with the UMWA, but the steel industry continued to resist the union. The Appalachian agreement was renewed with the wage differential intact until 1941, the first year in some time that a majority of the firms in the coal industry made a profit. The UMWA decided the time was ripe to eliminate the 40 cent differential, and they found an ally in the northern operators. The southern operators withdrew from the conference and formed the Southern Coal Producers Association but signed the agreement under pressure from government mediators a month after the northern operators. The captive mine operators also signed after strikes and mediation.[31] The UMWA had achieved the first national labor contract that eliminated wage differentials between North and South.

Having reestablished the UMWA by the end of 1934, Lewis turned his attention to the wider cause of industrial unionism. At the 1935 Atlantic City convention of the American Federation of Labor, Lewis urged the delegates to "organize the unorganized!" He promptly helped establish the Committee for Industrial Organization; in 1936 the CIO began major organizing drives, backed by UMWA organizers and money from its refurbished treasury, in the rubber, auto, and steel industries. Following his greatest victories with the CIO in the late 1930s, Lewis made the most serious mistake of his career. He withheld support from President Roosevelt's bid for a third term in 1940, and supported Wendell Wilkie. When Roosevelt won, Lewis resigned as president of the CIO, and devoted his full attention to his duties as president of the UMWA. Lewis led the miners out on strike four times during the Second World War, and won substantial gains. During the period of the federal government's seizure and administration of the coal mines, Lewis exacted a contract which established a Welfare and Retirement Fund and prompted a survey of health conditions in coal mining communities.[33]

Disputes between the UMWA and coal operators about contract terms and royalty payments to the Welfare and Retirement Fund continued throughout the late 1940s, resulting in strikes and the imposition of a three-day work week by the UMWA. Under government pressure, the operators and the UMWA hammered out a firm basis for the operation of the Fund and other terms for a new contract in the National Bituminous Coal Wage Agreement of 1950. Although it was not immediately apparent, a new era had begun for the coal industry. In this strife-torn industry, there would be no national strike for 22 years. The establishment of the Bituminous Coal Operators' Association (BCOA) later in 1950 provided a dominant group of operators with whom the UMWA could make contracts that would establish the terms for the entire industry. As payments to the Welfare and Retirement Fund were tied to production, the operators were given a major incentive to mechanize their operations. Successive contracts during the fifties were signed without strife. In 1958 the contract included the controversial "Protective Wage Clause" which had the intention of establishing a national wage standard in the coal industry, even if it meant driving the smaller operators out of business. One result was a number of lawsuits charging a conspiracy between the UMWA and BCOA to ruin those smaller operators who were not signatories to the contract.[34]

It is unlikely that Lewis and the UMWA had foreseen the amount of unemployment that would result from the commitment to mechanization. Some critics of the 1950 agreement have described it as a sell-out of the membership and an accommodation to the interests of the large coal producers. A more balanced view is provided by Davitt McAteer: "The decision made by John L. Lewis in 1950 is difficult to take issue with. It was a major economic policy decision as to what was best for the union--nothing less, nothing more. It was basically a decision that an industry with high-paying jobs for a few men is to be preferred to an industry with low-paying jobs for anybody. In these terms it cannot be questioned. (One might object, however, to the fact that the UMWA took no responsibility whatsoever for the men thrown out of work as a result.)"[35] It is unlikely that government intervention short of management of the coal industry could have slowed the impact of mechanization on employment; the National Coal Board in Britain was able to do a much better job of phasing in mechanization and retaining the labor force over a longer period. Government action could have cushioned the impact on the unemployed miners of the Appalachian coalfields, however; and it is to the discredit of all parties involved that it took a decade for the federal government to respond to the plight of the region.

Lewis retired in January 1960 after forty years as president of the UMWA. He was succeeded by Thomas Kennedy, UMWA vice-president, who continued in office until his death in 1963. W.A. (Tony) Boyle had been named vice-president by the union's executive board, and he succeeded Kennedy, and won election to the office of president in 1964. Boyle inherited the authoritarian structure and tradition that had been established by Lewis over his long career.[36] He stepped into control of a union that had been declining in membership and influence since 1950. The mechanization that followed the 1950 contract had reduced the number of miners employed in the industry from 416,000 in 1950 to 134,000 in 1965; almost the same amoung of coal as in 1950 was produced in 1965 by one-third the labor force. As a result of the "Protective Wage Clause" in the 1958 contract, many of the smaller mines in the central Appalachian fields had broken their contracts with the union. As the non-union mines multiplied, payments to the UMWA Welfare and Retirement Fund from central Appalachia declined. In 1962 the union announced it would be forced to close the ten Miners' Memorial Hospitals built in the 1950s. Only government and private intervention managed to save the hospital system by establishing the Appalachian Regional Hospital chain in 1964.

Boyle continued the anti-democratic administration of the UMWA in the Lewis pattern, but showed little of the crusading zeal that had endeared Lewis to the miners. By the late 1960s, a rank-and-file movement had taken the lead in pushing for adequate black lung compensation legislation on the state level, most dramatically in West Virginia, and at the federal level. The Black Lung Associations won a victory in the West Virginia legislature in 1969 and got the UMWA pushing for new health and safety legislation in the wake of the Consolidation Coal Company disaster at Fairmont in 1968.[37] Just before Lewis' death in June 1969, Ralph Nader had addressed a letter to him charging that Boyle had been derelict in providing leadership to the UMWA. At the same time, Joseph Yablonski, a UMWA executive board member, announced he would challenge Boyle in the union's 1969 elections. Although Boyle claimed victory following the balloting, Yablonski was expected to challenge the results. He never got the opportunity; Yablonski, his wife and daughter were murdered in their beds on New Years Eve 1969. Investigation of the murders eventually led to the trial and conviction of a number of UMWA officials up to and including Boyle.[38]

The Department of Labor ordered another election, and the rank-and-file Miners for Democracy nominated a slate headed by Arnold Miller. The Miller slate defeated Boyle in the 1972 election, and began work on restoring democracy in the UMWA. The reform administration met many of its campaign commitments: elections have been held for officers of all districts, the medical and pension program was reorganized into four

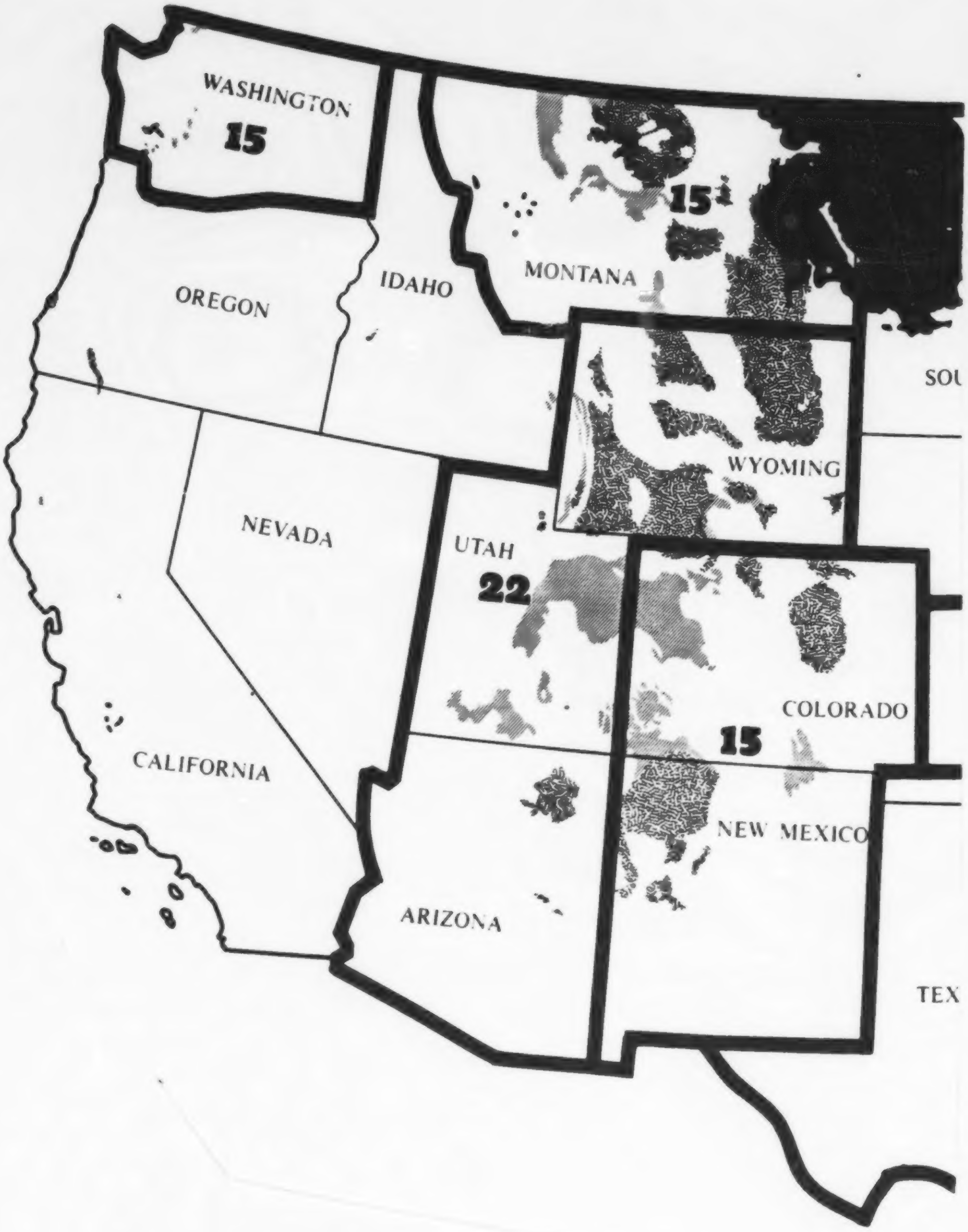
Health and Retirement Funds and the number of beneficiaries expanded, new organizing drives were launched, and a contract was negotiated with the BCOA in 1974 with substantial gains in wages and fringe benefits.[39] The 1974 contract created considerable confusion and bottlenecks in grievance procedures, however, which resulted in a rapidly increasing number of wildcat strikes in the industry. Miller won reelection to the office of UMWA president in 1977 with a plurality, but not a majority, in a three-way race.

An unexpectedly long and bitter 110 day strike over the next contract took place from December 1977 to March 1978. Wage gains were substantial and the grievance procedures were simplified, but the health program of the UMWA was dismantled. The union held on to rights won previously for safety committees and the right of miners to refuse to work under circumstances they deem dangerous. The operators won the right to institute bonus plans for increased productivity, a method the union had opposed as detrimental to safety. Although Miller now commands a solid majority of the UMWA's International Executive Board, there is widespread questioning of his leadership and discontent among the rank-and-file. Most of the reform-minded staff that joined the Miller administration in 1973 were fired or had quit prior to the 1977 election, and it remains to be seen whether the union can maintain many of the progressive initiatives in such areas as housing, health care, credit unions, and political action begun in the early days of the Miller administration.

THE ORGANIZATIONAL STRUCTURE OF THE UMWA

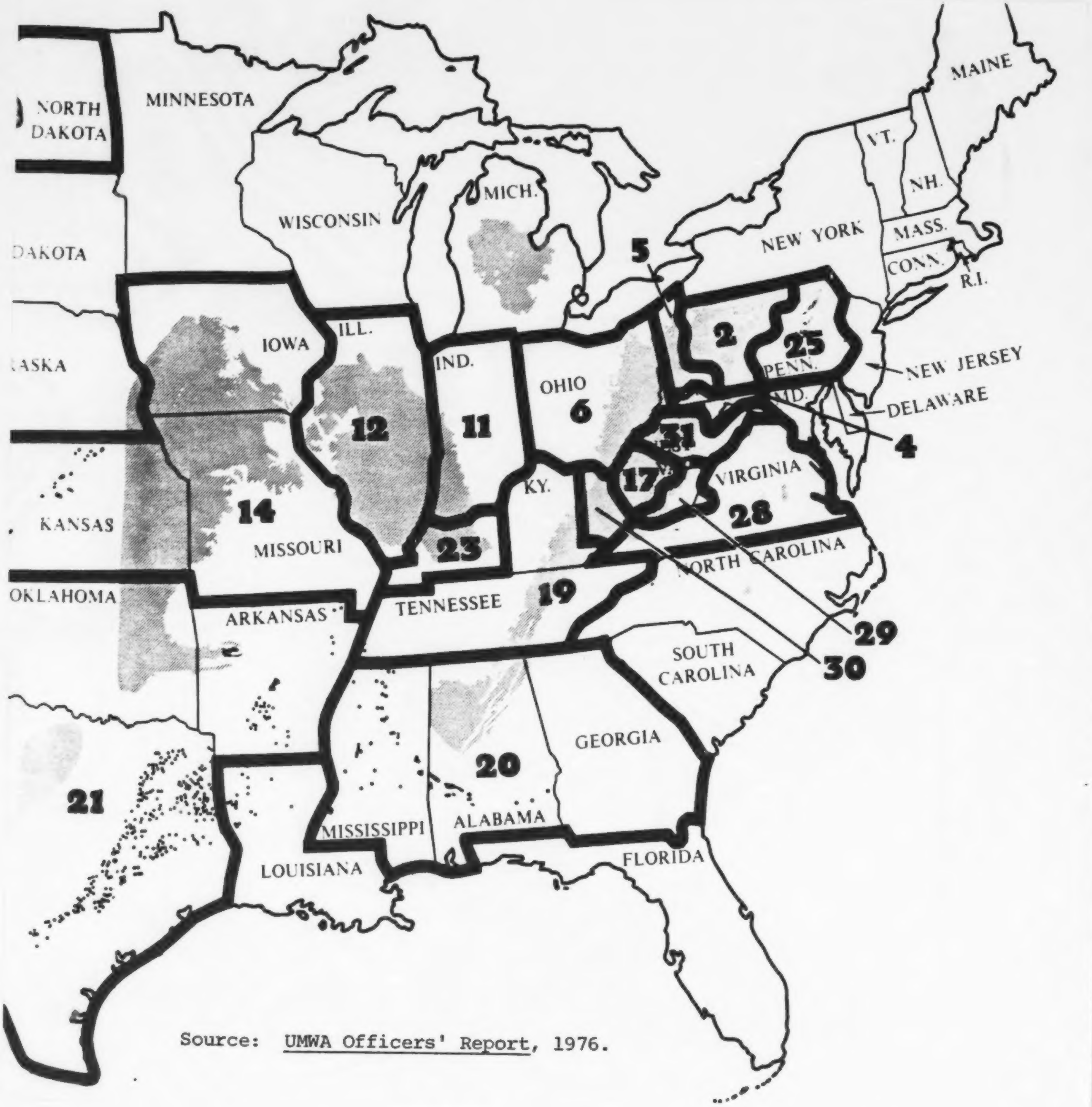
The UMWA is divided into 19 districts in the United States and 2 in Canada. Coalfields in the western United States are covered by UMWA districts 14, 15, 21 and 22. Of the eastern districts, only three lie entirely outside the ORBES region: district 25, which covers eastern Pennsylvania anthracite; district 28 in Virginia; and district 20 in Alabama. Covering the ORBES region are districts 2 and 5 in Pennsylvania; district 4 in western Maryland and southwestern Pennsylvania; district 6 in Ohio and the northern West Virginia panhandle; district 11 in Indiana; district 12 in Illinois; districts 17, 29 and 31 in West Virginia; district 19 in southeastern Kentucky and Tennessee; district 23 in western Kentucky; and district 30 in eastern Kentucky. Figures 8-1 and 8-2 map the UMWA districts in the western and eastern states. Each district has a president and secretary-treasurer, and a representative who sits on the union's International Executive Board. The district officers are listed in Table 8-1.

The membership of the UMWA is concentrated in the eastern coalfields, where the union claims approximately 175,000 working members at present. The UMWA probably represents no more than 8,000 working miners in the states west of the Mississippi. Table 8-2 lists UMWA membership by district for 1976. Although the union represents a substantial majority of the


WASHINGTON
15
MONTANA
15
IDAHO
OREGON
SOU
WYOMING
NEVADA
UTAH
22
COLORADO
15
CALIFORNIA
NEW MEXICO
ARIZONA
TEX

Source: UMWA Officers' Report, 1976.

Figure 8-1: UMWA Districts, Western States


NORTH DAKOTA
MINNESOTA
DAKOTA
ASKA
KANSAS
OKLAHOMA
WISCONSIN
MICH.
IOWA
ILL.
IND.
OHIO
6
12
11
14
MISSOURI
23
KY.
17
31
VIRGINIA
28
NEW YORK
VT.
NH.
MAINE
MASS.
CONN.
R.I.
5
2
25
PENN.
MD.
NEW JERSEY
DELAWARE
4
NORTH CAROLINA
TENNESSEE
19
29
30
ARKANSAS
SOUTH CAROLINA
GEORGIA
20
ALABAMA
MISSISSIPPI
LOUISIANA
FLORIDA
21

Source: UMWA Officers' Report, 1976.

Figure 8-2: UMWA Districts, Eastern States

TABLE 8-1

UNITED MINE WORKERS OF AMERICA: NATIONAL AND DISTRICT OFFICES AND OFFICIALS, JUNE 1979

District and Address	Officers	
INTERNATIONAL OFFICE United Mine Workers' Bldg. 900 Fifteenth St., N.W. Washington, D.C. 20005 202-638-0530	President: Vice President: Sec/Treas: Vice-President, Pensioner Affairs: 502-821-4248	Arnold Miller Sam Church, Jr. Willard A. Esselstyn James Blair Box 283 Madisonville, KY 42431
District 2 521 W. Horner St. Ebensburg, PA 15931 814-472-8330	*IEB Member: President: Sec/Treas:	Paul Bichko Val Scarton Walter Harris
District 4 Gallatin National Bank Bldg. Uniontown, PA 15401 412-438-8591	IEB Member: President: Sec/Treas:	Walter Suba James Kelly Ed Bytnar
District 5 938 Penn Avenue Pittsburgh, PA 15222 421-281-9300	IEB Member: President: Sec/Treas:	Martin Connors Lou Antal Pete Sabo
District 6 #1, Dilles Bottom Shadyside, OH 43947 614-676-3972	IEB Member: President: Sec/Treas:	Bill Lamb John Guzek Jerry Binni
District 11 301 N. 8th Street Terre Haute, IN 47808 812-232-6074	IEB Member: President: Sec/Treas:	Wilbert Killion Larry Reynolds Sam Lutz
District 12 Reisch Bldg., 117 S. 5th St. Springfield, IL 62701 217-522-9691	IEB Member: President: Sec/Treas:	Vacant Kenneth Dawes Leroy Bauer

(Continued)

*International Executive Board

Table 8-1 Continued

District and Address	Officers	
District 14 Box 436 2809 N. Broadway, Suite 1 Pittsburg, KS 66762 316-231-2260	IEB Member: President: Sec/Treas:	Robert Long William Giles Nathan Swigart
District 15 6415 W. 44th Ave. Denver, CO 80033 303-425-7110	IEB Member: President: Sec/Treas:	Nick Halamandaris Bill Hurtado James Craig
District 17 Box 1313 Charleston, WV 25325 304-346-0341	IEB Member: President: Sec/Treas:	Vernon Massey Jack Perry Maynard Daniel
District 18 401-224 Ninth Ave., S.W. Calgary, Alberta, Canada T2P1K2 403-266-4081	IEB Member: President: Sec/Treas:	Stuart Johnson Michael Tamtom John Sanyshyn
District 19 Box 158 Middlesboro, KY 40965 606-248-2985	IEB Member: President: Sec/Treas:	Eddie Sturgill Joseph Phipps E.A. McDaniel
District 20 1200 Fourth Avenue, South Birmingham, AL 35233 205-323-1555	IEB Member: President: Sec/Treas:	Frank Clements Charles Fuller David Richardson
District 21 #5 Towson Plaza 3610 Towson Avenue Fort Smith, AR 72901 501-782-7402	IEB Member: President: Sec/Treas:	Vacant Robert L. Oswald Vacant
District 22 P.O. Box 783 Price, UT 84501 801-637-2037	IEB Member: President: Sec/Treas:	Frank Roybal Bill Jones Louis Pestotnik

(Continued)

Table 8-1 Continued

District and Address		Officers
District 23		
Box 430	IEB Member:	Jack Dixon
Madisonville, KY 42431	President:	Tommy Gaston
502-821-2774	Sec/Treas:	Roscoe Miller
District 25		
30 N. Laurel St.	IEB Member:	William Savitsky
Hazleton, PA 18201	President:	Walter Kraska
717-455-3621	Sec/Treas:	Joseph Gorka
District 26		
Commercial Bldg.	IEB Member:	Alan Foley
Glace Bay, N.S., Canada B1A5V2	President:	William Marsh
902-849-6609	Sec/Treas:	John Wilson
District 28		
P.O. Box 28	IEB Member:	Miness Pridemore
Castlewood, VA 24224	President:	John Kennedy
703-762-5537	Sec/Treas:	Jackie Stump
District 29		
Chilson Ave. at Raleigh Rd.	IEB Member:	Joe Davidson
Box 511	President:	Dennis Saunders
Beckley, WV 25801	Sec/Treas:	Harold Hayden
304-252-0611		
District 30		
Williamson Rd., Box 2068	IEB Member:	J.B. Trout
Pikeville, KY 41501	President:	Robert Carter
606-437-7377	Sec/Treas:	Bobby Roy Justice
District 31		
310 Gaston Avenue	IEB Member:	Richard Weaver
Fairmont, WV 26554	President:	Burdette Crowe, Sr.
304-363-7500	Sec/Treas:	Dennis Scarford

International Auditors

Bob MacKeigan, Glace Bay, Novia Scotia, Canada
Charles Washlack, Bentleyville, PA
Joe Tuemler, Chelyan, WV
Al Daniel, St. Michael, PA

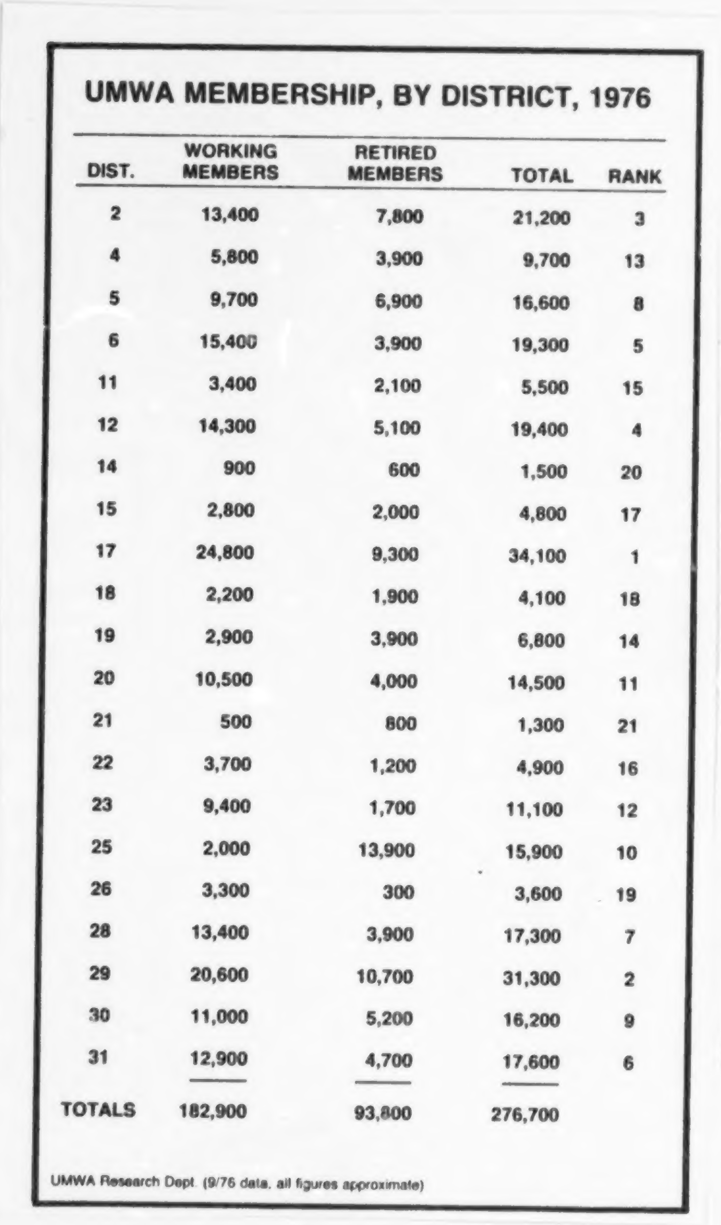
International Tellers

Michael MacKinnon, Glace Bay, Novia Scotia, Canada
Frederick Merrin, Sr. Amsterdam, OH
Jonathan Williams, Beckley, WV
Tony Testa, Burgettstown, PA

Source: United Mine Workers Journal (June, 1979), p. 31.

working miners in the country, it is more heavily represented in underground than surface mines. The UMWA thus represents a smaller proportion of the total tonnage (now estimated to be only 50 percent of total national production) than of the total number of miners. This is particularly true in the West, where the base of the UMWA is with the underground miners in Colorado, Utah, and New Mexico, and where the young workers in the new surface mines of the Northern Great Plains see themselves more as heavy equipment operators than coal miners. Figure 8-3 shows the UMWA's share of coal production by district. It reveals that the union has organized 50 percent or less of the production in district 2 (central Pennsylvania), districts 19 and 30 (eastern Kentucky and Tennessee), and the western districts 15, 21 and 22.

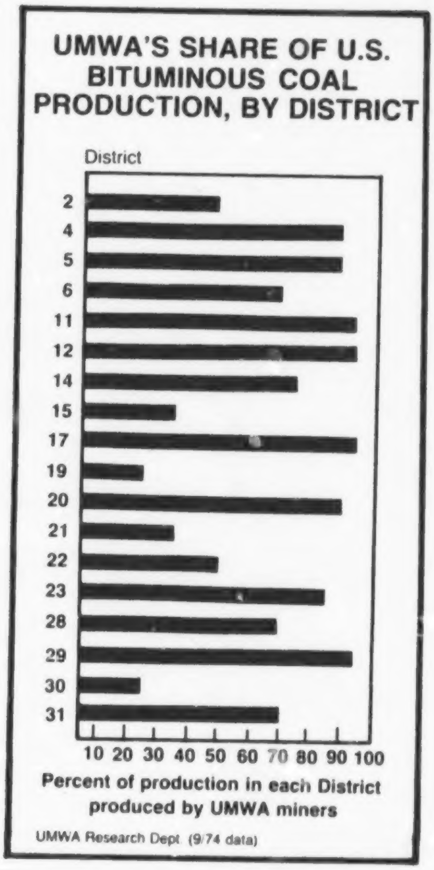
TABLE 8-2



UMWA MEMBERSHIP, BY DISTRICT, 1976

DIST.	WORKING MEMBERS	RETIRED MEMBERS	TOTAL	RANK
2	13,400	7,800	21,200	3
4	5,800	3,900	9,700	13
5	9,700	6,900	16,600	8
6	15,400	3,900	19,300	5
11	3,400	2,100	5,500	15
12	14,300	5,100	19,400	4
14	900	600	1,500	20
15	2,800	2,000	4,800	17
17	24,800	9,300	34,100	1
18	2,200	1,900	4,100	18
19	2,900	3,900	6,800	14
20	10,500	4,000	14,500	11
21	500	800	1,300	21
22	3,700	1,200	4,900	16
23	9,400	1,700	11,100	12
25	2,000	13,900	15,900	10
26	3,300	300	3,600	19
28	13,400	3,900	17,300	7
29	20,600	10,700	31,300	2
30	11,000	5,200	16,200	9
31	12,900	4,700	17,600	6
TOTALS	182,900	93,800	276,700	

UMWA Research Dept. (9/76 data, all figures approximate)



UMWA'S SHARE OF U.S. BITUMINOUS COAL PRODUCTION, BY DISTRICT

Percent of production in each District produced by UMWA miners

UMWA Research Dept. (9/74 data)

Figure 8-3

PROGRESSIVE MINE WORKERS OF AMERICA

Progressive Mine Workers of America
314 East Adams Street
Springfield, IL 62701
217-522-8891

Eugene Hughes, President
Howard E. Lyon, Secretary-Treasurer
Executive Board:
Charles Greer, Indiana
Ken Ledford, Wyoming-Montana
Wayne Lewis, Kentucky
Edgar Manley, Illinois
Eugene Thompson, North Dakota

The Progressive Miners of America (PWA) was formed in 1932 by a group of miners who broke away from the UMWA's district 12 in Illinois. The incident that precipitated the breakaway was the decision of the UMWA's president, John L. Lewis, to accept a reduction in the miners' wage rate from $6.10 to $5.00 a day under a contract with the Illinois Coal Operators Association. Behind this incident stood the general decline in the coal industry in the 1920s, and a decade of fueding between Lewis and officials of district 12. The PWA quickly found that it was unable to negotiate a higher wage level than the UMWA contract, but the loyalty of many miners to the PWA was retained out of an intense resentment of Lewis' dictatorial methods within the UMWA and what was perceived as his sell-out to the Illinois coal operators. During 1933 the UMWA managed to use policies set by the Bituminous Coal Labor Board to restrict the ability of the Progressives to take contracts away from the UMWA. Initially, the PWA had a number of socialists among its members, including the editor of its newspaper, The Progressive Miner; Lewis and the UMWA attacked them as Communists. The PWA was also hit by substantial federal court convictions for violence and coersion that injured the union financially and gave it bad publicity both among miners and operators. For the first five years of its life, the PWA made few gains beyond its initial strongholds in Illinois; it lost any tinge of radicalism by 1940.

In 1937 the union took advantage of a rift between John L. Lewis and the American Federation of Labor (AFL) over the formation of the Committee for Industrial Organization (CIO) and obtained a charter from the AFL as the Progressive Mine Workers of America (PMWA). The AFL urged the PMWA to move into other UMWA territories, and organizing drives were launched in Kansas, Kentucky, Pennsylvania, and West Virginia. The campaign was almost a complete failure, and by the early 1940s, the only remnant of the drive was one local at Benham, in Harlan County, Kentucky, which through rather unusual circumstances persists to this day. The Progressives had a peak membership of around 34,000 in 1934, which declined to 16,000 by 1942 and 8,000 in 1949.[40] The PMWA was unable to expand its limited base in Illinois and its toehold in eastern Kentucky until the late 1960s when it obtained contracts with companies mining in the Northern Great Plains states.

Presently the PMWA has approximately 2,800 working members. There are some 300 pensioners in Illinois. Illinois has 700 active PMWA miners, employed by Sahara Coal and Robertson & Associates (which is closing down).

There are 125 working members in Indiana and 500 in eastern Kentucky at the Wisconsin Steel mine at Benham. The PMWA eastern states' contract follows the UMWA contract closely. Wyoming and Montana have the largest contingent of PMWA miners, with 1,250 or so employed under contracts with the NERCO/Peter Kiewit mine at Decker, NERCO's Jim Bridger mine at Rock Springs, and Arch Minerals' Seminole Nos. 1 and 2 and Medicine Bow mines. Some 200 PMWA miners work at Knife River Coal's Beulah and Gascoyne mines in North Dakota. The PMWA appears to have little future in the eastern states, except as an alternative for small mine operators in Illinois and Indiana threatened by UMWA organizing drives. It does appear to have solid prospects for growth in the Northern Great Plains, an area of the West which does not have a strong UMWA tradition, and where a number of companies would prefer not to contract with the UMWA. The old leadership of the PMWA, based in Illinois, remains intransigent against a reconciliation with the UMWA. The Benham mine in Harlan County could be won away from the Progressives by the UMWA at the expiration of the present contract. Over time, the leadership of the union will likely swing to the western states, and the implications of that shift remain to be seen.

SOUTHERN LABOR UNION

Southern Labor Union
P.O. Box S
Oneida, TN 37841
615-569-8335

Johnnie Joseph, President
Mack Dilbeck, Vice-President
Brian Fultz, 2nd Vice-President
Jim Polly, Secretary (Acting)
Paul Byrge, Treasurer

The Southern Labor Union (SLU) has its origins in the Scott County (Tennessee) Miners' Union founded in 1957 at a mine that had closed rather than continue to operate under a UMWA contract. By 1959 several additional locals had been organized in other counties and states, and the name of the organization was changed to Southern Labor Union. The SLU, whose contracts were soon recognized by the National Labor Relations Board, appears to be viewed by operators of some small and medium-sized mines as a means of preventing organizing efforts by the UMWA. By signing a contract with the SLU, an operator is protected by the National Labor Relations Act from organizing drives by other unions at all times other than a brief period prior to the expiration of the contract. The SLU is widely perceived as a "company union." Contracts are negotiated with each company separately; the SLU has no standard contract as does the UMWA and PMWA. SLU locals are not known to strike. Little material has been published on the SLU, and most of what has been written is hostile.[41]

Presently the SLU has approximately 3,500 active members, organized into some 80 locals that contract with some 70 companies. The largest number of SLU miners are in Kentucky which has about 1,800 members in some 35 locals, followed by Tennessee with 1,000 members in some 25 locals, perhaps 500 members in Pennsylvania in 10 locals, and the rest of the members in 5 locals in Alabama and 3 or 4 locals each in West Virginia and Virginia. Mines under contract with the SLU produce a total in the vicinity of 7 million tons a year. The SLU pension fund was established in 1970, and there are currently only 80 pensioners.

OTHER UNIONS

The UMWA, PMWA, and SLU are the only unions that presently organize only coal miners on a multi-state basis. Other unions represent some workers engaged in coal mining. There are a small number of employee associations not affiliated with national unions that negotiate contracts for a single mine or company. Examples from eastern Kentucky are the Scotia Employees Association (which contracts for one mine of the Blue Diamond Coal Company, with another being represented by the SLU), and the Falcon Coal Company Miners Association. The independent truckers who haul coal for Falcon also have their association which negotiates contracts with the company. The Teamsters may represent truck drivers and equipment operators at a few small surface mines in Indiana and Ohio that are not covered by UMWA contracts.

Two unions play an important role in the coal industry in the western states, the International Union of Operating Engineers and the International Brotherhood of Electrical Workers (IBEW). The Operating Engineers has long organized the operators of steam and electrical plants in buildings and factories and the operators of heavy equipment used in the construction industry. In recent years the Operating Engineers has represented workers building pipelines and highways.[42] Many people who have worked on such projects have found work operating heavy equipment in surface mines, and the Operating Engineers have in some instances attempted to become their bargaining agent. Although the Operating Engineers represent workers at one surface mine in Indiana, its major strength is in the new surface mines in the West, where it has contracts covering perhaps 1,000 coal miners at such locations as Utah International's Navajo mine in New Mexico, Western Energy's Colstrip mine in Montana, and Washington Irrigation's Centralia mine in Washington. The Operating Engineers represents a larger number of miners at surface metal mines in the West. The IBEW organizes workers in all phases of the electrical industry, including coal-fired electrical generating plants. In Texas the IBEW represents workers at certain lignite surface mines that are located adjacent to the power plants.

The final union that deserves mention is the United Steel Workers of America, which does not represent any coal miners at present, but does represent underground and surface metal miners. The Steel Workers has incorporated the former catch-all branch of the UMWA, District 50, which was ejected from the Mine Workers in the late 1960s.[43] One interesting outcome of this amalgamation is that the workers in most of the Appalachian Regional Hospitals are represented by the Steel Workers. If the UMWA were ever to suffer a thorough collapse, it is likely that the Steel Workers would move at least to represent the captive coal mines of the steel industry.

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CHAPTER IX

PROJECTIONS AND IMPACTS OF INCREASED COAL PRODUCTION

President Carter's National Energy Plan, announced in 1977, calls for a doubling of coal production by 1985 to 1.2 billion tons. Most industry analysts are skeptical, however, that coal demand will actually reach this level although their estimates of probable production vary widely. Among the many variable forces driving the demand for coal are: (1) the growth rate of the U.S. economy; (2) the growth rate of electrical energy use; (3) the growth rate of steel and other industrial uses of coal; (4) the availability and relative costs of alternative energy sources, especially oil, natural gas, and nuclear; (5) the costs of cleaning, shipping, storage and burning of coal; (6) federal policies on air pollution standards and surface mining reclamation; (7) the socioeconomic and environmental effects of coal mining and, especially, coal burning; (8) coal exports and imports; and (9) coal industry labor relations and productivity. Many of these forces may be projected only with great uncertainty, and predicting coal demand remains a precarious venture.

PROJECTED DEMAND FOR COAL

Despite the fact that coal consumption is said to be at the heart of the national energy plan, industry spokesmen are less optimisitc about coal growth in 1979 than they were two years ago. According to Carl Bagge, National Coal Association president, current demand is running 150 to 200 million tons below capacity and 10,000 miners are currently out of work.[1] Among other factors, this reflects decreased demand for American metallurgical coal by the steel industry here and abroad, accompanied by at least temporary imports of foreign coke and less than expected demand from electrical utilities.[2] The Edison Electric Institute predicts a general slowdown in electrical use. It forecasts only a five percent annual increase in electricity consumption over the next decade instead of an annual growth rate of seven percent which was experienced during the ten years prior to the oil embargo. For this reason, the Edison Electric Institute has cut its forecast for 1985 coal demand by electric utilities to 785 million tons, down from 846 million tons projected three years ago.[3] In fact, demand for electricity grew only 2.3 percent in 1977. The Bureau of Mines predicts 988 million tons of coal production by 1985, a figure lower than that of the National Energy Plan. A report to the Congress by the General Accounting Office in 1977 predicted that "it will be very difficult to achieve one billion tons annually by 1985" because of physical, economic, environmental, and health considerations. As the report notes, the discrepancy between the Edison Electric Institute and Bureau of Mines projections represents the difference between opening 438 to 825 new mines and recruiting 288,300 to 531,600 new miners--requirements the GAO finds the coal industry "hard-pressed" to meet.[4] Equally pessimistic is the preliminary draft of a 1978 coal production and use study by the Office of Technology Assessment of the United States Congress which predicts 1985 coal production to fall between 955 and 1,145 million tons nationally and total production by the year 2000 to fall between 1,505 and 2,110 million tons.[5] ORBES states, according to the study, are expected to contribute between 417 and 497 million tons to these estimates for 1985. These recent projections are well below the earlier forecasts which predicted a doubling of coal production in the eastern states by the year 2000.[6]

One method of approaching future coal production levels is to look at the announced plans for new and expanded production by coal companies. There have been three major sources for such estimates: the U.S. Bureau of Mines, McGraw-Hill's Coal Age magazine and Keystone Coal Industry Manual, and the National Coal Association. The Bureau of Mines issued updated reports for the eastern and western states in 1978, and Coal Age has just issued its annually revised forecast. Using the February 1979 Coal Age reports as the most up-to-date, we have compiled in Table 9-1 projections for coal production in 1985 by state. Our base figures are the Department of Energy data on coal production by state for 1977. We have adopted the depletion factor of 3 percent a year (x 8 years = 24 percent) for the eastern states, as suggested by the National Coal Association in its report.[7] This depletion factor does not really refer to reserves, but to the average life of a coal mine (roughly 30 years); new mines must be opened just to replace tonnage from mines that close. The resulting total of 1,224 million tons of coal produced nationally in 1985 would appear to be an optimistic figure. A certain amount of slippage can probably be expected. If electric utilities slow or postpone construction of power plants, the coal companies will do the same with their mines on the drawing boards. These figures do not allow for expansion by independent producers that might not be covered in the surveys made by the data sources; this may be a fair assumption, given the slack market demand presently. On the other hand, utilities project substantial expansion of coal-fired power plants in the eastern states, and less than half of the coal needed is presently under contract--possibly leaving room for independent producers to expand their markets.[8] It is likely that a small depletion factor should also be applied to the Western Interior coalfields and to underground production from Colorado and Utah, but these would be quite modest subtractions. The most important conclusion from Table 9-1 is that the major expansion of coal production will take place in the western states, from 166 million tons in 1977 to 665 million in 1985. Production in the ORBES states is projected to rise only from 450 million tons in 1977 to 501 in 1985. Eastern states production as a whole would rise only from 523 million tons in 1977 to 580 million tons in 1985.

Tables 9-2 through 9-15 compare the National Coal Association, Bureau of Mines, and Coal Age projections by region and state. By and large, the reports are in general agreement. The largest expansion by 1985 among the ORBES states is projected for Illinois (a net of 31 million tons, allowing for depletion); apparently utilities and coal companies figure they can

TABLE 9-1

PROJECTED COAL PRODUCTION BY STATE IN 1985 (In million tons)

	1977 Production (DOE)	Depletion Factor (24%)	New & Expanded Production Through 1985 (Coal Age 1979)[a]	Projected Total 1985 Production
ORBES				
Illinois	53.880	-12.931	44.05	84.999
Indiana	27.995	- 6.718	10.60	31.877
Kentucky	142.945	-34.307	34.20	142.838
KY (E)	92.150	-22.116	21.45	91.484
KY (W)	50.795	-12.191	12.75	51.354
Ohio	46.205	-11.089	16.31	51.426
Pennsylvania	83.225	-19.974	16.56	79.811
West Virginia	95.405	-22.897	37.90	110.408
Subtotal:	449.655	-107.916	159.62	501.359
Non-ORBES Eastern				
Alabama	21.220	- 5.092	15.60	31.728
Georgia	.185	- .044	--	.141
Maryland	3.290	- .789	1.80	4.301
Tennessee	10.320	- 2.476	--	7.844
Virginia	37.850	- 9.084	5.40	34.166
Subtotal:	72.865	-17.485	22.80	78.180
Eastern States Subtotal:	522.520	-125.401	182.42	579.539
Western				
Alaska	.665	--	--	.655
Arizona	11.475	--	1.00	12.475
Arkansas	.570	--	.80	1.370
Colorado	11.920	--	39.52	51.440
Iowa	.525	--	--	.525
Kansas	.630	--	2.18	2.810
Missouri	6.625	--	--	6.625
Montana	29.320	--	56.85	86.170
New Mexico	11.255	--	41.50	52.755
North Dakota	12.165	--	29.65	41.815
Oklahoma	5.345	--	2.75	8.095
Texas	16.765	--	51.55	68.315
Utah	9.240	--	33.66	42.900
Washington	5.055	--	--	5.055
Wyoming	44.500	--	239.20	283.700
Subtotal:	166.055		498.66	664.715
Total United States:	688.575	-125.401	681.08	1,244.254

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[a] We have subtracted 1977 production from expanding mines that are included in the *Coal Age* figures in Tables 9-2 through 9-15. Reprinted from *Coal Age*, February, 1979. Copyright McGraw-Hill, Inc.

TABLE 9-2

PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 IN THE ORBES STATES
(In million tons)

State	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Illinois	39.95	32.20	54.90
Indiana	17.80	12.60	18.10
Kentucky	45.95	45.65	48.00
Kentucky (E)	26.45	37.65	30.30
Kentucky (W)	19.50	8.00	17.70
Ohio	14.80	21.25	23.46
Pennsylvania	28.05	26.45	22.56
West Virginia	54.64	69.97	50.20
Totals:	201.19	208.12	217.22[a]

Sources: (1) National Coal Association, "Study of New Mine Additions and Major Expansion Plan of Coal Industry," November 1977.

(2) U.S. Department of the Interior, Bureau of Mines Information Circular 8765, *Projects to Expand Fuel Sources in Eastern States--An Update of Information Circular 8725*, 1978.

(3) George Nielson, "Keystone Predicts Rapid Expansion," *Coal Age*, February 1979, pp. 90-114.

[a] The *Coal Age* figures include 57.6 million tons of 1977 production from expanding mines. Reprinted from *Coal Age*, February, 1979. Copyright McGraw-Hill, Inc.

TABLE 9-3

ILLINOIS PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Clinton	3.60	3.60	3.60
Douglas	2.25	3.00	2.20
Edwards	--	--	1.60
Franklin	5.30	4.00	4.00
Fulton	1.45	1.90	1.90
Hamilton	2.50	2.50	2.50
Jackson	2.80	2.80	2.80
Knox	0.35	--	--
Logan	--	--	2.00
Macoupin	2.10	2.40	4.40
Randolph	2.80[a]	--	1.50
St. Clair	2.30[a]	1.50	3.90
Saline	2.40	2.40	3.60
Vermilion	--	1.50	--
Wabash	3.60	3.60	3.60
Washington	1.30	--	--
Williamson	1.00	3.00	5.60
Not Identified	3.20	--	11.70
Totals:	39.95	32.20	54.90[b]

[a] National Coal Association reports that Peabody Coal Company has announced a total of 2.6 million tons for Randolph and St. Clair Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] The Coal Age figures include 10.85 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February, 1979. Copyright McGraw-Hill, Inc.

TABLE 9- 4

INDIANA PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Clay	2.50[a]	2.40	2.40
Gibson	--	2.00	--
Greene	1.70	--	1.70
Knox	1.10	1.10	2.20
Pike	2.90	2.60	2.80
Sullivan	3.00[b]	--	3.00[b]
Vigo	1.10[a,b]	--	1.00[b]
Warrick	4.50	4.50	5.00
Not Identified	1.00	--	--
Totals:	17.80	12.60	18.10[c]

[a] National Coal Association reports that Peabody Coal Company has announced a total of 0.2 million tons for Clay and Vigo Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] National Coal Association reports that Peabody Coal Company has announced a total of 2.0 million tons for Sullivan and Vigo Counties. We have arbitrarily allocated one-half of the announced tonnage to each county. Coal Age reports this same projection.

[c] The Coal Age figures include 7.5 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February, 1979. Copyright McGraw-Hill, Inc.

TABLE 9-5

EASTERN KENTUCKY PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 (In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Bell	1.30	1.30	1.50
Breathitt	4.30	7.68[a]	4.30
Floyd	0.50	--	--
Harlan	2.50	2.10	2.65
Johnson	0.50	0.50	--
Knott	0.88[b]	0.60	0.50
Knox	--	6.66[a]	2.10
Leslie	0.38[c]	--	--
Letcher	1.35	0.75	3.95
McCreary	--	--	--
Martin	4.50	4.50	4.70
Perry	1.26[b,c]	6.66[a]	1.35
Pike	8.00	6.90	9.25
Totals:	26.45	37.65	30.30[d]

[a] The Bureau of Mines reports that American Electric Power has announced 20.0 million tons for Breathitt, Knox, and Perry Counties. We have arbitrarily allocated one-third of the announced tonnage to each county. Although included in 1977 and 1978 Coal Age/Keystone projections, this item is dropped in the 1979 edition.

[b] National Coal Association reports that Falcon Coal Company has announced 1.75 million tons for Knott and Perry Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[c] National Coal Association reports Falcon Coal Company has announced a total of 0.75 million tons for Leslie and Perry Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[d] The Coal Age figures include 8.85 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February, 1979. Copyright McGraw-Hill, Inc.

TABLE 9- 6

WESTERN KENTUCKY PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 (In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Henderson	3.20	--	3.20
Hopkins	1.00	1.00	1.50
McLean	1.20[a]	--	--
Muhlenberg	5.50[a,b]	4.00	5.70[b]
Ohio	6.30[b]	3.00	5.00[b]
Union	0.75[c]	--	--
Webster	1.55[c]	--	2.30
Totals:	19.50	8.00	17.70[d]

[a] National Coal Association reports that Peabody Coal Company has announced a total of 2.4 million tons for McLean and Muhlenberg Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] National Coal Association reports that Peabody Coal Company has announced a total of 2.0 million tons for Muhlenberg and Ohio Counties. We have arbitrarily allocated one-half of the announced tonnage to each county. Coal Age reports this same projection.

[c] National Coal Association reports that Peabody Coal Company has announced a total of 1.5 million tons for Union and Webster Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[d] The Coal Age figures include 4.95 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9-7

OHIO PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Athens	--	1.50	--
Belmont	--	2.80	2.30
Gallia	--	--	--
Harrison	1.40	2.20	2.20
Meigs	4.00	4.20	3.60
Lawrence	--	--	--
Monroe	4.20	6.40	11.10
Morgan	0.85[a]	--	--
Muskingum	--	0.15	0.20
Noble	2.50	2.50	2.50
Perry	0.85[a]	--	--
Tuscarawas	--	--	0.36
Vinton	1.00	1.50	1.20
Totals:	14.80	21.25	23.46[b]

[a] National Coal Association reports Peabody Coal Company has announced a total of 1.70 million tons for Morgan and Perry Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] The Coal Age figures include 7.15 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9- 8

PENNSYLVANIA PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 (In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Armstrong	2.90	0.60	2.80[a]
Butler	0.50	0.50	--
Cambria	1.60	2.10	0.31
Clearfield	2.60	--	--
Fayette	--	--	1.00
Greene	9.00	11.00	10.30
Indiana	5.85	4.00	3.65[b]
Jefferson	--	--	1.40[a,b]
Somerset	4.40	4.40	1.90
Washington	--	0.25	1.20
Not Identified	1.20	3.60	--
Totals:	28.05	26.45	22.56[c]

[a] *Coal Age* reports Keystone Energy Company has announced a total of .20 million tons for Armstrong and Jefferson Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] *Coal Age* reports Benjamin Coal Company has announced a total of 2.60 million tons for Indiana and Jefferson Counties. We have arbitrarily allocated one-half of announced tonnage to each.

[c] The *Coal Age* figures include 6.0 million tons of 1977 production from expanding mines. Reprinted from *Coal Age*, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9-9

WEST VIRGINIA PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 (In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Barbour	2.50	3.30	1.70
Boone	7.30	6.60	6.35
Fayette	1.50	3.30	1.60
Grant	2.35	2.40	1.50
Greenbrier	--	0.90	--
Harrison	--	1.90	1.90
Kanawha	4.15	5.30	5.05
Lincoln	0.32	--	0.80
Logan	2.50	3.80	4.60
McDowell	1.40	5.425	2.625
Marion	2.00	--	2.00
Mercer	--	--	0.45
Mingo	7.85	4.525	3.125
Nicholas	1.60	2.00	0.30
Pocahontas	--	0.55	0.55
Preston	0.90	--	--
Raleigh	10.77	9.05	6.45
Randolph	--	--	--
Upshur	2.70	8.25	5.30
Wayne	2.20	4.40	2.00
Webster	--	1.97	0.70
Wyoming	4.60	6.00	3.20
Totals:	54.64	69.97	50.20[a]

[a] The Coal Age figures include 12.3 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979.

TABLE 9-10

PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 IN THE NON-ORBES EASTERN STATES (In million tons)

State	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Alabama	23.75	24.45	19.20
Maryland	2.00	1.80	1.80
Tennessee	2.10	2.70	--
Virginia	5.95	8.95	6.30
Totals:	33.80	37.90	27.30[a]

[a] The Coal Age figures include 4.5 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979. Copyright McGraw-Hill , Inc.

TABLE 9-11

MARYLAND PROJECTED NEW AND EXPANDED PRODUCTION BY 1985 (In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	*Coal Age/ Keystone 1979
Garrett	2.00	1.80	1.80

*Reprinted from Coal Age, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9-12

ALABAMA PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Cherokee	--	0.50[a]	0.50
Cullman	0.70	1.30[c]	--
DeKalb	--	0.50[a]	--
Fayette	2.00	2.50[b]	0.75[d]
Jefferson	8.30	6.50	5.80
Marion	--	--	0.85
Shelby	0.50	0.50	0.50
Tuscaloosa	8.40	9.90[b,c]	7.15[d]
Walker	2.85	1.75[c]	3.65
Winston	1.00	1.00	--
Totals:	23.75	24.45	19.20[e]

[a] Bureau of Mines reports Canamex Coal Corp. has announced a total of 1.0 million tons for Cherokee and DeKalb Counties. We have arbitrarily allocated one-half of announced tonnage to each county.

[b] Bureau of Mines reports Alabama Fuel Sales Company has announced a total of 1.0 million tons for Fayette and Tuscaloosa Counties. We have arbitrarily allocated one-half of announced tonnage to each county.

[c] Bureau of Mines reports Drummond Company has announced a total of 3.0 million tons for Cullman, Tuscaloosa and Walker Counties. We have arbitrarily allocated one-third of announced tonnage to each county.

[d] *Coal Age* reports Republic Steel Corp. has announced a total of 1.5 million tons for Fayette and Tuscaloosa Counties. We have arbitrarily allocated one-half of announced tonnage to each county.

[e] The *Coal Age* figures include 3.6 million tons of 1977 production from expanding mines. Reprinted from *Coal Age*, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9-13

TENNESSEE PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Bledsoe	--	0.47[b]	--
Campbell	0.80	--	--
Marion	0.65[a]	0.65[a]	--
Sequatchie	0.65[a]	1.11[a,b]	--
Van Buren	--	0.47[b]	--
Totals:	2.10	2.70	--

[a] National Coal Association and the Bureau of Mines report that Grundy Mining has announced a total of 1.30 million tons for Marion and Sequatchie Counties. We have arbitrarily allocated one-half of the announced tonnage to each county.

[b] The Bureau of Mines reports that Amax-Tenn has announced a total of 2.00 million tons for Bledsoe, Van Buren and Sequatchie Counties. We have arbitrarily allocated one-third of the announced tonnage to each county.

TABLE 9-14

VIRGINIA PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
(In million tons)

County	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Buchanan	2.20	2.20	2.95
Dickinson	2.00	3.00	2.00
Tazewell	--	0.65	0.65
Wise	1.10	1.10	0.70
Not Identified	0.65	2.00	--
Totals:	5.95	8.95	6.30[a]

[a] The Coal Age figures include .9 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979. Copyright McGraw-Hill, Inc.

TABLE 9-15

PROJECTED NEW AND EXPANDED PRODUCTION BY 1985
IN THE WESTERN STATES (In million tons)

State	National Coal Association 1977	Bureau of Mines 1978	Coal Age/ Keystone 1979
Arizona	8.00	--	8.00
Arkansas	0.20	0.20	0.80
Colorado	24.30	52.12[a]	43.19
Iowa	0.20	--	--
Kansas	0.25	--	2.45
Missouri	--	--	--
Montana	88.70	85.10[b]	83.65
New Mexico	21.00	89.10[c]	55.90
North Dakota	34.85	60.60[c]	37.44
Oklahoma	2.15	0.45[d]	3.15
Texas	44.10	49.18	61.95
Utah	27.50	56.50[e]	41.93
Washington	7.00	5.00	--
Wyoming	224.00	204.60[f]	276.40
Totals:	482.25	602.85	614.86*

[a] Tonnage not announced for ten projects.

[b] Tonnage not announced for six projects.

[c] Tonnage not announced for one project.

[d] Tonnage not announced for seventeen projects.

[e] Tonnage not announced for seven projects.

[f] Tonnage not announced for three projects.

Sources: (1) National Coal Association, "Study of New Mine Additions and Major Expansion Plan of Coal Industry," November 1977.

(2) U.S. Department of the Interior, Bureau of Mines Information Circular #8772, Projects to Expand Energy Sources in the Western States--An Update of Information Circular 8719, 1978.

(3) George Nielson, "Keystone Predicts Rapid Expansion," Coal Age, February 1979, pp. 90-114.

*The Coal Age figures include 116.2 million tons of 1977 production from expanding mines. Reprinted from Coal Age, February 1979. Copyright McGraw-Hill, Inc.

continue to use Illinois coal despite its high sulfur content. Coal production will begin in Clinton, Hamilton and Logan Counties. Indiana is projected for a net gain of nearly 4 million tons. Both the eastern and western coalfields in Kentucky may only show enough new production to offset depletion; there is no net gain projected for Kentucky overall. Pike County in eastern Kentucky will experience the largest net increase. Ohio is projected for a net gain of 5 million tons, despite its problem with high sulfur coal; Monroe County alone will have a net increase of over 9 million tons. Pennsylvania is projected for a net loss of around 3.4 million tons, although Greene County should experience a substantial net increase. West Virginia is projected for a net gain of 15 million tons; most of this increase is projected from the coalfields in the southern half of the state, and thus will depend on the state of the domestic and international metallurgical coal markets. Among the non-ORBES eastern states, only Alabama is projected for a net gain (over 10 million tons) by 1985; Jefferson and Tuscaloosa Counties will gain most. Virginia's new and expanded production may fall short of covering depletion by some 3 million tons. Among the western states, the largest expansions will take place in the sub-bituminous fields of Wyoming and Montana and the lignite fields of Texas and North Dakota. New Mexico, Colorado and Utah will also register large gains.

SOCIAL AND ECONOMIC IMPACTS OF COAL PRODUCTION

Whatever the actual levels of coal production in the ORBES states, coal mining will have major impacts on worker health and safety, the environment, and the social and economic aspects of community life. Coal burning and coal mining both will have important environmental effects. The impacts of coal combustion are difficult to assess but potentially threatening. Problems include the potentially harmful levels of sulfur emissions which some analysts fear "scrubbers" are ineffective in removing, and potential long-run climatic and thermal influences known as the "greenhouse effect" with potential world-wide impacts on coastal water levels and agricultural zones.[9] In addition, there are the direct environmental effects of mining which include acid drainage, land subsidence, flooding, coal mine waste disposal, and the removal of land from other uses such as farming, economic diversification, and housing.[10] Coal mining influences on the environment are likely to be greatest in the Appalachian portion of the ORBES region because of the extent of production, the topography of the land, and the historical tradition of cost externalization, neglect, and inadequate taxation and regulation. Currently, 94 percent of the total acid drainage, 74 percent of the total land subsidence, and 81 percent of the total acreage of unreclaimed land in the United States are in Appalachia.[11]

Coal affects the health of populations in locations of its use and its production. Coal mining is a dangerous occupation with serious health and safety threats to the labor force. Coal miners' death rate from respiratory diseases, as well as their incidence of stomach cancer, lung cancer, and hypertension, is greater than that for the general population. Roughly 4,000 deaths per year are attributable to pneumoconiosis. Even with the conservative growth scenarios used by the Office of Technology Assessment to predict coal mining expansion, they estimate that between 3,000 and 5,000 coal miners are likely to be killed between now and the year 2000 and that 350,000 to 700,000 disabling injuries averaging four to five months each also will occur.[12] This represents great suffering and cost for workers, their families, and the general public.

Few studies have been made of the potential social and economic impacts of increasing coal production in the eastern United States. Partly this is because attention has focused on the sudden rise of western coal production where tonnage increases will principally occur. The 1977 report by the Comptroller General predicted that impacts would be most severe in the western states, especially in sparsely-populated areas.[13] The Office of Technology Assessment, on the other hand, reports that if coal production were to be translated into the concept of more people, the socioeconomic impacts could be greater in the East, and especially central Appalachia, than in the West.[14] To date, however, little research or planning for such potential impacts have been made. Within the ORBES region, only Kentucky has systematically examined the potential fiscal outcomes of increased coal production.

Although there is little real likelihood that Kentucky coal production will actually double in the next decade, given factors discussed above, a study of the fiscal impact of such a high-growth scenario concluded "that the gains in the state in terms of employment, income and tax revenue would probably exceed the costs that would accrue to the State in terms of highway maintenance, education, police and fire protection, and a variety of other costs that can be estimated within a reasonable range."[15] The study found that Kentucky would principally benefit from an increase of 53,330 workers, an annual inrease of $154.2 million in state taxes annually, and an annual increase of $11 million in local revenues.

Studies of aggregate fiscal effects of coal mining for a state or region provide clues about government capacity, although not necessarily its willingness, to mitigate the social costs of production. These studies do not address the diverse patterns of local environmental, health, social, and economic impacts on coal mining communities. The situations in these communities, and their abilities to plan for and respond to production impacts vary greatly throughout the ORBES region. Two recent studies[16] comparing the impacts of increased production in eastern states suggests that many of the (1) older, single-industry mining communities, as well as (2) some new mining communities in rural areas may not be able to absorb the shock of increased production. This is especially so when new strains that accompany economic and population growth are added to a legacy of unmet externalized costs, inadequate taxation, and insufficient public services in the older mining communities. Both studies, on the other hand, concluded that economically diversified communities in the East--such as Tuscaloosa

County, Alabama; Perry County, Illinois; and certain areas of southeastern Ohio--could absorb increased coal production and employment without severe strain. One study concludes that "the ability of coal field communities to cope with the various impacts of increasing production is largely dependent upon their course of previous development. The factors most responsible for the communities' relative capabilities can thus be described in terms of the extent to which two economic phenomena--a coal export base and concentrated ownership/control of land and other resources--have dominated all other activities."[17]

The disabling effects of economic dependence on coal extraction and absentee ownership result in many negative features associated with coal mining communities including vast out-flows of capital; the crippling effects of boom-bust growth patterns; industry over-expansion, competition and unemployment; unsafe and irresponsible mining practices; government corruption; and environmental ruin. Mining communities with such traditions will be hard-pressed to cope with the externalized costs of new increases in production since they still bear the costs of prior coal extraction.

A survey by the Office of Technology Assessment of community impacts in the eastern coalfields contrasted the coal-dependent communities of the central Appalachian portions of the ORBES region with better diversified areas in Pennsylvania, Ohio, Illinois, Indiana, and western Kentucky where towns were said to appear more prosperous, public services to be closer to national norms, and miners more likely to enjoy a better quality of community life. In the single-industry towns and villages of southern West Virginia and eastern Kentucky, however, they found low levels of public services, severely inadequate water and sewer systems, insufficient roads and public transportation, poor schools, severe housing shortages, undercapitalized financial institutions, and general public dissatisfaction with community life.[18]

New mining developments in previously rural non-mining areas also pose special problems for some ORBES areas, especially in central Appalachia with its history of population pressure and rural poverty. Martin County, Kentucky symbolizes the dilemma of such coal-based growth. Of only marginal importance as a coal producer prior to the 1970s, Martin County's production soared to nearly 9 million tons annually by 1977 with the increased demand for eastern Kentucky coal. It is now the third largest producer in that region of Kentucky. Its miners "topped the state with annual earnings of $20,900" in 1976. Per capita incomes rose 144 percent from $1,845 to $4,500 from 1971 to 1975. At the same time, however, rapid growth has put tremendous pressure on this rural social structure. The county reportedly "has no sewers and its fledgling water system is unable to meet current demands," flatland for much needed housing is at a minimum, local roads are "broken up under the pressure of traffic from residents, construction companies and coal trucks," and its schools are judged to be inadequate.[19]

While broad inferences can be made about social and economic impacts in subregions of the ORBES states, an adequate understanding requires careful assessments at county and community levels.

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[1] Quoted in Mark Potts, "Sick Industry," Charleston (West Virginia) *Sunday Gazette-Mail* (11 March 1979).

[2] For an analysis of the various components of coal demand, see Charles E. Mann and James N. Heller, *Coal and Profitability: An Investor's Guide* (New York: McGraw-Hill, 1979).

[3] Quoted in George Getschow, "Coal Demand Fails: Too Many Expectations; Many Pits Are Closed," *The Wall Street Journal* (21 February 1979).

[4] Comptroller General, General Accounting Office, *U.S. Coal Development--Promises, Uncertainties* (Washington, DC: U.S. Government Printing Office, September 1977), pp. i-vii.

[5] Office of Technology Assessment, Congress of the United States, *The Direct Use of Coal: Prospects and Problems of Production and Combustion*. (Washington, D.C.: Office of Technology Assessment, 1979), p. 5.

[6] Resource Planning Associates, *Energy Supply/Demand Alternatives for the Appalachian Region: Executive Summary*, prepared for the Council for Environmental Quality, Appalachian Regional Commission, and National Science Foundation (Cambridge, MA: Resource Planning Associates, March 1975); this report is summarized in Ora Spaid, "Forecast: Doubled Coal Production in Appalachia," *Appalachia*, 8 (June-July 1975), pp. 1-10.

[7] National Coal Association, "Study of New Mine Additions and Major Expansion Plans of the Coal Industry and the Potential for Future Coal Production" (November 1977), p. 2.

[8] Office of Electric Power Regulation, Federal Energy Regulatory Commission, *Status of Coal Supply Contracts for New Electric Generating Units, 1977-1986* (May 1978), pp. 1-17. See also the data on expansion of coal-fired plants in the ORBES region and states in Steven D. Jansen, *Electrical Generating Unit Inventory, 1976-1986* (Urbana, IL: Ohio River Basin Energy Study, November 1978). Optimistic projections for electric utility demand for coal are found in Bureau of Mines, *United States Energy Through the Year 2000 (Revised)* (December 1975). On the other hand, the prospects for energy conservation are highlighted in Council on Environmental Quality, *The Good News About Energy* (Washington, DC: U.S. Government Printing Office, 1979).

[9] See Tom Alexander, "New Fears Surround the Shift to Coal," Fortune, 56 (20 November 1978), pp. 50-55.

[10] For good overviews of the environmental impacts of coal mining growth, see Comptroller General, U.S. Coal Development--Promises, Uncertainties, pp. 6.1-6.54 and Office of Technology Assessment, The Direct Use of Coal, chapter 5. On strip mining, see Harry Caudill, My Land is Dying (New York: Dutton, 1971) and The Stripping of Appalachia: A Citizen's Reference Book (Washington, DC: Center for Science in the Public Interest, 1972). On the relationship between strip mining and flooding in Central Appalachia, see Jerry Hardt, Harlan County Flood Report (Corbin, KY: Appalachia--Science in the Public Interest, 1978), and Department of Natural Resources and Environmental Protection, The Floods of April: A Report on the April 1977 Flood in Southeastern Kentucky (Frankfort, KY: Commonwealth of Kentucky, November 1977).

[11] Comptroller General, U.S. Coal Development, p. 6.24.

[12] Office of Technology Assessment, The Direct Use of Coal, pp. 259-290.

[13] Comptroller General, U.S. Coal Development, p. xiii. On western coal impacts, see Garth Massey, Newcomers in an Impacted Area of Wyoming, prepared for the Center for Studies of Metropolitan Problems of the National Institute of Mental Health (Laramie, WY: Center for Urban and Regional Analysis, Univ. of Wyoming, May 1977); and Social Impact Section, vol. 4 of the Proceedings of the Fort Union Coal Field Symposium (Billings, MT: Eastern Montana College, April 1975).

[14] Office of Technology Assessment, The Direct Use of Coal, pp. 290-306.

[15] Charles W. Hultman and Bernard Davis, Implications of a Doubling of Kentucky Coal Production for the State Economy (Lexington, KY: College of Business and Economics, Univ. of Kentucky, July 1977). For a study reaching similar conclusions with different methods, see a paper by Randal Ihara and Ernest VanHoose, "A Preliminary Benefit-Cost Assessment of Increased Coal Production in the Eastern United States and Appalachia: The Case of Eastern Kentucky, 1980-1990" (Lexington, KY: Kentucky Center for Energy Research, February 1978).

[16] See Helen M. Lewis and associates, "Coal Productivity and Community" and Lee Balliet, "A Pleasing tho' Dreadful Sight: Social and Economic Impacts of Coal Production in the Eastern Coalfields," a report to the Office of Technology Assessment, United States Congress, 1978.

[17] Balliet, "A Pleasing tho' Dreadful Sight," p. 94. Also see chapter 6 ("Land and Mineral Ownership") above, for a discussion of social, economic, and political impacts of absentee and corporate ownership in the ORBES states.

[18] Office of Technology Assessment, The Direct Use of Coal, pp. 304-306.

[19] Jim Parks, "Martin County, New to Coal Kingdom, Discovers Both Prosperity and Growing Pains," Louisville (Kentucky) Courier-Journal (4 June 1978), pp. E-1 and E-3.

APPENDIX:

COUNTY COAL PROFILES

NOTES ON INFORMATION IN COUNTY COAL PROFILES

All production and employment data are from individual state reports for 1976 (see pp. 105-6 in main report for exact references).

Projections for increased production by 1985 are taken from the Bureau of Mines Information Circular 8725, Projects to Expand Fuel Sources in Eastern States (June 1976), not the 1978 update of this report. We have not subtracted a factor for the depletion of existing mines. These projections should thus be viewed as estimates on the high side.

All Illinois coal land ownership data are taken from the study of the Illinois South Project, Who's Mining the Farm. The Kentucky land ownership data on Harlan and Perry Counties are from a special study by Joe F. Childers, Jr. of the Appalachian Center. The West Virginia land ownership data are from Tom Miller, Who Owns West Virginia?, and Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia. For permission to use copyrighted material, we wish to thank The Illinois South Project, Inc.; The Huntington Publishing Company; and Holt, Rinehart and Winston.

No county breakdowns on producing companies are available for Virginia for 1976 or previous years. Such information may be available beginning with the 1978 Annual Report of the Virginia Department of Labor and Industry.

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Brown County	
Pittsburgh and Midway Coal Co.	4,799.25
Bureau County	
Peabody Coal Company	5,462.00
Cass County	
Nuclear Resources	3,367.15

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

ILLINOIS 1976

CHRISTIAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	3,278,065	10.6	892	8.6
Surface	0	0	0.0	0	0.0
Total:	1	3,278,065	5.6	892	6.0

Production Ranking of County: 5

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	3,278,065	0	3,278,065	892	0	892

Coal Land Owners	Acres Owned
Peabody Coal Company	1,738.03

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Clinton County	
Monterey Coal Company	1,514.51
Peabody Coal Company	985.67
Total:	1,738.03

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).

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ILLINOIS 1976

DOUGLAS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	2,776,756	9.0	769	7.4
Surface	0	0	0.0	0	0.0
Total:	2	2,776,756	5.0	769	5.2

Production Ranking of County: 9

Projected Production Increase by 1985: 2.25 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ziegler Coal Corporation (Houston Natural Gas Corporation)	2,776,756	0	2,776,756	769	0	769

Coal Land Owners	Acres Owned
Zeigler Coal Company	831.32

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Edgar County	
Meadowlark Farms (Amax Coal Co.)	2,988.31
Peabody Coal Company	552.90
Total:	3,541.21

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, *Who's Mining the Farm* (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

FRANKLIN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	4,927,675	15.9	1,613	15.5
Surface	0	0	0.0	0	0.0
Total:	3	4,927,675	8.5	1,613	10.9

Production Ranking of County: 4

Projected Production Increase by 1985: 1.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Old Ben Coal Company (Sohio Petroleum Co.)	4,927,675	0	4,927,675	1,613	0	1,613

Coal Land Owners	Acres Owned
Zeigler Coal Company	7,176.26
Freeman United Mining Company	5,859.22
Old Ben Coal Company	3,271.88
U.S. Steel	1,682.75
Madison Coal Company	299.50
Total:	18,289.61

ILLINOIS 1976

FULTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	4	2,888,718	10.6	670	15.3
Total:	4	2,888,718	5.0	670	4.5

Production Ranking of County: 8

Projected Production Increase by 1985: 1.8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Freeman United Coal Mine Co. (General Dynamics Corp.)	0	1,055,999	1,055,999	0	250	250
Consolidation Coal Co. (Continental Oil Co.)	0	876,365	876,365	0	167	167
Amax Coal Co. (Amax, Inc.)	0	743,524	743,524	0	164	164
Midland Coal Co. (Asarco, Inc.)	0	212,830	212,830	0	89	89

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Fulton County	
Meadowlark Farms (Amax Coal Company)	16,627.50
Freeman United Mining Company	10,204.00
Consolidation Coal Company	9,057.00
Midland Coal Company	7,157.00
Peabody Coal Company	4,506.14
Total:	47,551.64

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

GALLATIN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	1,324,826	4.3	601	5.8
Surface	1	527,064	1.9	162	3.7
Total:	2	1,851,890	3.2	763	5.2

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	1,324,826	527,064	1,851,890	601	162	763

Coal Land Owners	Acres Owned
Peabody Coal Company	7,551.23
Consolidation Coal Company	2,265.53
Total:	9,816.76

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Grundy County	
Peabody Coal Company	
Freeman United Mining Company	1,544.24
General Electric Coal Company	1,018.04
Total:	916.77
	3,479.05
Hamilton County	
Arkel Land Company (Arch Minerals)	
Inland Steel	2,656.00
Meadowlark Farms (Amax Coal Co.)	1,885.00
Total:	460.00
	5,001.00
Henry County	
Peabody Coal Company	
Consolidation Coal Company	5,241.00
Total:	885.00
	6,126.00

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).

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ILLINOIS 1976

JACKSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	761,474	2.8	270	6.1
Total:	5	761,474	1.3	270	1.8

Production Ranking of County: 16

Projected Production Increase by 1985: 2.8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	0	434,850	434,850	0	211	211
Three States Trucking Carbondale, IL	0	270,370	270,370	0	43	43
Central States Mining Elksville, IL	0	56,254	56,254	0	16	16

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Jackson County	
Consolidation Coal Company	10,523.36
Amax Coal Company	2,397.68
Arch Minerals	1,375.52
Peabody Coal Company	1,309.29
Zeigler Coal Company	393.69
Total:	16,149.54

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, *Who's Mining the Farm* (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

JEFFERSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	4,667,694	15.1	1,973	19.0
Surface	1	504,430	2.0	81	1.8
Total:	4	5,172,124	9.0	2,054	13.9

Production Ranking of County: 3

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Freeman United Coal Mining Co. (General Dynamics Corp.)	2,772,801	0	2,772,801	1,360	0	1,360
Inland Steel Coal Co. (Inland Steel Co.)	1,894,893	0	1,894,893	613	0	613
Robertson & Associates Bell Rive, IL	0	504,430	504,430	0	81	81

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Jefferson County	
Robertson Associates (TVA)	1,825.46
Inland Steel	1,449.46
Arch Minerals	1,433.97
Freeman United Mining Company	1,045.22
Mason Mines	148.35
Total:	5,902.46

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Kankakee County	
Peabody Coal Company	506.28

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

KNOX COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	1,534,248	6.0	224	5.1
Total:	1	1,534,248	3.0	224	1.5

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Midland Coal Company (Asarco, Inc.)	0	1,534,248	1,534,248	0	224	224

Coal Land Owners	Acres Owned
Midland Coal Company	25,853.00
Peabody Coal Company	8,729.00
Total:	34,582.00

ILLINOIS 1976

MACOUPIN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	3,257,007	10.5	856	8.2
Surface	0	0	0.0	0	0.0
Total:	2	3,257,007	6.0	856	5.8

Production Ranking of County: 6

Projected Production Increase by 1985: 2.1 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Freeman United Coal Mining Co. (General Dynamics Corp.)	476,586	0	476,586	306	0	306
Monterey Coal Company (Exxon Corp.)	2,780,421	0	2,780,421	550	0	550

Coal Land Owners	Acres Owned
Peabody Coal Company	1,302.52
Monterey Coal Company	1,056.05
Mobil Oil Corporation	728.53
Freeman United Mining Company	313.71
Total:	3,400.81

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Madison County	
Peabody Coal Company	3,742.50
Mobil Oil Corporation	787.40
Union Electric Coal Company	55.60
Total:	4,676.50
McDonough County	
Freeman United Mining Company	4,829.40
Meadowlark Farms (Amax Coal Co.)	1,052.92
Total:	5,882.32
Menard County	
Nuclear Resources	5,847.46

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

ILLINOIS 1976

MONTGOMERY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	1,784,478	6.0	511	4.9
Surface	0	0	0.0	0	0.0
Total:	1	1,784,478	3.0	511	3.5

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	1,784,478	0	1,784,478	511	0	511

Coal Land Owners	Acres Owned
Midland Oil Company	672.56
Consolidation Coal Company	208.00
Freeman United Coal Company	269.69
Total:	1,150.25

ILLINOIS 1976

PEORIA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	716,653	3.0	192	4.4
Total:	1	716,653	1.0	192	1.3

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Midland Coal Company (Asarco, Inc.)	0	716,653	716,653	0	192	192

Coal Land Owners	Acres Owned
Midland Coal Company	14,942.03
Peabody Coal Company	2,171.67
Freeman United Coal Company	1,079.67
Total:	18,193.37

ILLINOIS 1976

PERRY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	11,378,602	42.0	1,275	29.0
Total:	5	11,378,602	19.6	1,275	8.6

Production Ranking of County: 1

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	0	4,087,095	4,087,095	0	507	507
Southwestern Illinois Coal Corp. (Arch Mineral Corp.)	0	3,537,959	3,537,959	0	330	330
Amax Coal Company (Amax, Inc.)	0	2,661,775	2,661,775	0	217	217
Freeman United Coal (General Dynamics Corp.)	0	1,091,773	1,091,773	0	221	221

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Perry County	
Peabody Coal Company	1,919.83
Arch Minerals	17,665.03
Consolidation Coal Company	16,978.74
Freeman United Coal Company	11,729.35
Amax Coal Company	7,248.62
Total:	55,541.57

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, *Who's Mining the Farm* (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

ILLINOIS 1976

RANDOLPH COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	2,682,475	8.6	886	8.5
Surface	4	5,425,092	19.9	812	18.5
Total:	7	8,107,567	13.9	1,698	11.5

Production Ranking of County: 2

Projected Production Increase by 1985: 2.8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	1,859,542	2,964,394	4,823,936	542	420	962
Southwestern Illinois Coal Corp. (Arch Mineral Corp.)	0	1,451,566	1,451,566	0	178	178
Consolidation Coal Co. (Continental Oil Co.)	0	955,074	955,074	0	190	190
Zeigler Coal Company (Houston Natural Gas Corp.)	822,933	0	822,933	344	0	344
Pine Ridge Coal Co. Sparta, IL	0	54,058	54,058	0	24	24

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Randolph County	
Peabody Coal Company	11,568.82
Arch Minerals	7,468.36
Consolidation Coal Company	6,326.49
Zeigler Coal Company	1,987.61
Total:	27,351.12

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, *Who's Mining the Farm* (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

ILLINOIS 1976

ST. CLAIR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	1,982,082	6.4	582	5.6
Surface	1	448,825	1.6	64	1.5
Total:	2	2,430,907	4.2	646	4.4

Production Ranking of County: 10

Projected Production Increase by 1985: 2.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Co. (Peabody Holding Co.)	1,982,082	448,825	2,430,907	582	64	646

Coal Land Owners	Acres Owned
Peabody Coal Company	11,492.18
Consolidation Coal Company	150.00
Total:	11,642.18

ILLINOIS 1976

SALINE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	1,097,751	3.6	459	4.4
Surface	3	962,888	3.5	170	3.9
Total:	5	2,060,639	3.5	629	4.3

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Sahara Coal Company Chicago, IL	1,097,751	830,308	1,928,059	459	150	609
Jadel Fuel Company Shawneetown, IL	0	83,222	83,222	0	11	11
Brown Brothers Excavating Harrisburg, IL	0	49,358	49,358	0	9	9

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Saline County	
Sahara Coal Company	9,077.56
Meadowlark Farms (Amax Coal Co.)	7,081.31
Peabody Coal Company	3,989.90
Chicago Harrisburg Coal Company	1,111.48
Young Development	781.75
Total:	22,042.00

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Sangamon County	
Nuclear Resources	201.02
Peabody Coal Company	64.49
Total:	265.51
Schuyler County	
Amax Coal Company	2,554.96
Freeman United Mining Company	641.00
Peabody Coal Company	1,789.91
Total:	4,985.87
Shelby County	
Consolidation Coal Company	276.00

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

STARK COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	298,319	1.1	82	1.9
Total:	1	298,319	0.5	82	0.6

Production Ranking of County: 18

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Midland Coal Company (Asarco Inc.)	0	298,319	298,319	0	82	82

Coal Land Owners	Acres Owned
Midland Coal Company	1,620.00
Peabody Coal Company	478.00
Total:	2,098.00

ILLINOIS 1976

VERMILION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.00
Surface	1	79,058	0.3	7	0.20
Total:	1	79,058	0.1	7	0.04

Production Ranking of County: 19

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Lee Coal Company Oakwood, IL	0	79,058	79,058	0	7	7

Coal Land Owners	Acres Owned
Amax Coal Company	6,002.56
Freeman United Mining Company	1,067.74
Peabody Coal Company	1,018.43
U.S. Steel Corporation	188.77
Total:	8,277.40

ILLINOIS 1976

WABASH COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	1,822,854	5.9	630	6.1
Surface	0	0	0.0	0	0.0
Total:	1	1,822,854	3.1	630	4.3

Production Ranking of County: 13

Projected Production Increase by 1985: 3.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amax Coal Company (Amax, Inc.)	1,822,853	0	1,822,853	630	0	630

Coal Land Owners	Acres Owned
Arch Minerals	2,957.98
Meadowlark Farms (Amax Coal Co.)	739.55
Consolidation Coal Company	618.58
Total:	4,316.11

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Will County	
Peabody Coal Company	610.00

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978).
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ILLINOIS 1976

WILLIAMSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	1,310,033	4.2	624	6.0
Surface	11	1,699,077	6.2	383	8.7
Total:	14	3,009,110	5.2	1,007	6.8

Production Ranking of County: 7

Projected Production Increase by 1985: 3.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amax Coal Company (Amax, Inc.)	0	731,056	731,056	0	151	151
Freeman United Coal Mining Co. (General Dynamics Corp.)	729,285	0	729,285	301	0	301
Peabody Coal Co. (Peabody Holding Co.)	0	512,839	512,839	0	142	142
Zeigler Coal Company (Houston Natural Gas Corp.)	507,701	0	507,701	283	0	283
Williamson Coal Company Energy, IL	0	209,859	209,859	0	44	44

ILLINOIS COAL LAND OWNERS

Owner (Parent Company) by County	Acres Owned
Williamson County	
Amax Coal Company	9,712.40
Peabody Coal Company	7,082.83
Zeigler Coal Company	6,751.52
Madison Coal Company	4,327.18
Consolidation Coal Company	2,454.00
Total:	30,327.93

Source: Janet M. Smith, David Ostendorf, and Mike Schechtman, Who's Mining the Farm (Herrin, IL: Illinois South Project, 1978). Copyright (c) The Illinois South Project, Inc.

INDIANA 1976

CLAY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	10	1,294,584	5.1	*	--
Total:	10	1,294,584	5.0		

Production Ranking of County: 6

Projected Production Increase by 1985: 2.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amax Coal Company (Amax, Inc.)	0	1,058,343	1,058,343	0	--	*
Brazil Coal & Clay (Brazil Coal & Clay)	0	184,640	184,640	0	--	*
Log Cabin Coal Co. Brazil, IN	0	23,342	23,342	0	--	*
Brazil Minerals, Inc. Terre Haute, IN	0	12,154	12,154	0	--	*
Delta Minerals Brazil, IN	0	13,735	13,735	0	--	*

*Employment not reported.

INDIANA 1976

DAVIESS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	110,369	0.4	*	---
Total:	5	110,369	0.4		

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Central Utility Indianapolis, IN	0	107,288	107,288	0	*	*
Ohio Valley Resources K. Stout, Marion, KY	0	3,081	3,081	0	*	*

*Employment not reported.

INDIANA 1976

DUBOIS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	9	279,932	1.1	*	---
Total:	9	279,932	1.1		

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
P.V. Corp. (P.V. Corp.)	0	249,932	249,932	0	*	*
M.T. Present Indianapolis, IN	0	30,000	30,000	0	*	*
Dixon-Present Co. Indianapolis, IN	0	0	0			

*Employment not reported.

INDIANA 1976

FOUNTAIN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	41,347	0.2	*	---
Total:	1	41,347	0.2		

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Maple Grove Coal Co. Rockville, IN	0	41,347	41,347	0	*	*

*Employment not reported.

INDIANA 1976

GIBSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	3	418,839	1.6	*	---
Total:	3	418,839	1.6		

Production Ranking of County: 9

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Solar Sources, Inc. Indianapolis, IN	0	402,434	402,434	0	*	*
Old Erin Coal Company Ferdinand, IN	0	16,405	16,405	0	*	*

*Employment not reported.

INDIANA 1976

GREENE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	3	1,832,751	7.2	*	
Total:	3	1,832,751	7.0		

Production Ranking of County: 5

Projected Production Increase by 1985: 1.7 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	0	1,767,409	1,767,409	0	*	*
J H & L Coal Company Terre Haute, IN	0	65,342	65,342	0	*	*

*Employment not reported.

INDIANA 1976

KNOX COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	3	938,137	3.7	*	
Total:	3	938,137	3.6		

Production Ranking of County: 7

Projected Production Increase by 1985: 1.1 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	0	898,137	898,137	0	*	*
M & T Coal Company	0	40,000	40,000	0	*	*

*Employment not reported.

INDIANA 1976

PERRY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	2	40,656	0.2	*	
Total:	2	40,656	0.2		

Production Ranking of County: 13

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
B & LS Contracting Bedford, IN	0	27,968	27,968	0	*	*
Mulzer Crushed Stone (Mulzer Crushed Stone Co.) Tell City, IN	0	12,688	12,688	0	*	*

*Employment not reported.

INDIANA 1976

PIKE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	69,600	16.2	13	
Surface	22	5,751,760	22.6	*	
Total:	23	5,821,360	22.5		

Production Ranking of County: 2

Projected Production Increase by 1985: 2.9 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Old Ben Coal Corp. (Standard Oil of Ohio)	0	4,546,284	4,546,284	0	*	*
Amax Coal Company (Amax, Inc.)	0	875,749	875,749	0	*	*
Park Coal Company Petersburg, IN	0	142,049	142,049	0	*	*
Black Beuty Coal Co. (T. & T. Land Corp.) Velpen, IN	0	80,000	80,000	0	*	*
Old Erin Coal Company Ferdinand, IN	0	79,681	79,681	0	*	*

*Employment not reported.

INDIANA 1976

SPENCER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	17	599,051	2.4	*	
Total:	17	599,051	2.3		

Production Ranking of County: 8

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Foertsch Construction Co. (Foertsch Construction Co.) Lamar, IN	0	193,790	193,790	0	*	*
Imperial Mining Co. (Imperial Mining Co.) Santa Claus, IN	0	191,600	191,600	0	*	*
Mulzer Crushed Stone (Mulzer Crushed Stone Co.) Tell City, IN	0	102,764	102,764	0	*	*

*Employment not reported.

INDIANA 1976

SULLIVAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	8	2,225,823	9.7	*	
Total:	8	2,225,823	9.6		

Production Ranking of County: 4

Projected Production Increase by 1985: 4.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amax Coal Company (Amax, Inc.)	0	1,461,350	1,461,350	0	*	*
Peabody Coal Company (Peabody Holding Co.)	0	703,807	703,807	0	*	*

*Employment not reported.

INDIANA 1976

VERMILLION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	3	2,695,147	10.6	*	
Total:	3	2,695,147	10.4		

Production Ranking of County: 3

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	0	2,678,944	2,678,944	0	*	*
Jones, Vernon Terre Haute, IN	0	16,203	16,203	0	*	*

*Employment not reported.

INDIANA 1976

VIGO COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	26,200	0.1	*	
Total:	5	26,200	0.1		

Production Ranking of County: 14

Projected Production Increase by 1985: 2.2 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Hysskind Asphalt Ft. Wayne, IN	0	23,000	23,000	0	*	*
C & J Mining Co. Terre Haute, IN	0	3,000	3,000	0	*	*
T L & H, Inc. Terre Haute, IN	0	200	200	0	*	*
J H & L Coal Co. Terre Haute, IN	0	0	0			

* Employment not reported.

INDIANA 1976

WARRICK COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	360,798	83.8	96	
Surface	21	9,229,496	40.4	*	
Total:	22	9,590,294	41.2		

Production Ranking of County: 1

Projected Production Increase by 1985: 4.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amax Coal Company (Amax, Inc.)	0	3,980,526	3,980,526	0	*	*
Peabody Coal Company (Peabody Holding Co.)	360,798	3,564,172	3,924,970	96	*	96
Walter Well Wadesville, IN	0	197,592	197,592	0	*	*
Koester Coal Company Poseyville, IN	0	104,517	104,517	0	*	*
L.G. Wasson Coal	0	44,383	44,383	0	*	*

*Employment not reported.

EASTERN KENTUCKY 1976

BELL COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	25	1,260,047	3.1	502	2.5
Surface	55	3,263,950	6.7	1,007	5.9
Total:	80	4,523,997	5.0	1,509	4.1

Production Ranking of County: 7

Projected Production Increase by 1985: 1.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Mt. Drive Coal Corp. Middlesboro, KY	0	1,525,249	1,525,249	0	326	326
Eastover Mining Co. (Duke Power Co.)	898,929	0	898,929	279	0	279
Appolo Fuels, Inc. Middlesboro, KY	0	510,478	510,478	0	171	171
Brownies Creek Collieries Balkan, KY	0	213,247	213,247	0	87	87
Stansbury & Company (Kaneb Services)	0	211,738	211,738	0	54	54

EASTERN KENTUCKY 1976

BOYD COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	8	267,343	0.5	75	0.4
Total:	8	267,343	0.3	75	0.2

Production Ranking of County: 27

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Coffey, Paul Constr. Co. Raceland, KY	0	194,005	194,005	0	42	42
Demar Coal Co., Inc. Ashland, KY	0	35,243	35,243	0	10	10
Wright, J. Frank Mining Greenup, KY	0	23,400	23,400	0	9	9
Cave Run Mining Co., Inc. Ashland, KY	0	5,428	5,428	0	9	9
McGuire, V. Coal Co. (Address Unknown)	0	5,000	5,000	0	2	2

EASTERN KENTUCKY 1976

BREATHITT COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	7	20,635	0.1	21	0.1
Surface	74	6,352,073	13.1	1,139	6.7
Total:	81	6,372,708	7.2	1,160	3.2

Production Ranking of County: 5

Projected Production Increase by 1985: 4.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Falcon Coal Company (Falcon Seaboard, Inc.)	0	4,606,520	4,606,520	0	418	418
Marty Corporation Coeburn, VA	0	499,131	499,131	0	89	89
Newcon Coal, Inc. Bulan, KY	0	244,630	244,630	0	50	50
Buckhorn Mining Co., Inc. Altro, KY	0	148,669	148,669	0	120	120
Chloe Drilling Co., Inc. Pikeville, KY	0	145,000	145,000	0	35	35

EASTERN KENTUCKY 1976

CARTER COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	1	472	0.001	2	0.01
Surface	43	333,430	0.7	318	1.9
Total:	44	333,902	0.4	320	0.9

Production Ranking of County: 24

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
General Refractories Co. Hitchins, KY	0	47,799	47,799	0	53	53
Big Valley Coal Co. Grayson, KY	0	42,181	42,181	0	9	9
Dennis Dean Coal Co. Grayson, KY	0	35,179	35,179	0	14	14
Tom Cooper Mining Co. Ashland, KY	0	34,000	34,000	0	14	14
Grayson Coal Co., Inc.	0	26,233	26,233	0	10	10

EASTERN KENTUCKY 1976

CLAY COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	30	221,243	0.6	225	1.1
Surface	56	569,828	1.2	370	2.2
Total:	86	791,071	0.9	595	1.6

Production Ranking of County: 18

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Leeco, Inc. (Kaneb Services)	139,403	16,115	155,518	54	7	61
Hardly Able Coal Co., Inc. Manchester, KY	0	108,555	108,555	0	31	31
R & R Coal Company London, KY	0	50,119	50,119	0	25	25
Caudill Construction Co. Manchester, KY	0	47,974	47,974	0	22	22
JOC Coal Co., Inc. Manchester, KY	0	46,835	46,835	0	37	37

EASTERN KENTUCKY 1976

ELLIOTT COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	18	373,234	0.8	183	1.1
Total:	18	373,234	0.4	183	0.5

Production Ranking of County: 22

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
S. S. C. Mining Co. Grayson, KY	0	94,398	94,398	0	16	16
D. D. & S. Coal Co., Inc. Sandy Hook, KY	0	67,332	67,332	0	48	48
Empress Coal Co., Inc. Sandy Hook, KY	0	65,000	65,000	0	12	12
Natchez Construction, Inc. Nashville, TN	0	57,146	57,146	0	29	29
Big Seam Coal Co., Inc. Grayson, KY	0	30,000	30,000	0	10	10

EASTERN KENTUCKY 1976

FLOYD COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	119	2,214,695	5.5	1,026	5.2
Surface	64	2,346,878	4.8	638	3.7
Total:	183	4,561,573	5.1	1,664	4.5

Production Ranking of County: 6

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Diamond Coal Company (Transcontinental Oil Corp.)	0	826,020	826,020	0	78	78
Ligon Preparation Co. Grethel, KY	524,397	0	524,397	152	0	152
Hite Preparation Co. McDowell, KY	353,095	0	353,095	146	0	146
Triple Elkhorn Mining Co. Prestonsburg, KY	0	319,322	319,322	0	69	69
Bailey Mining Company Bypro, KY	205,060	0	205,060	141	0	141

EASTERN KENTUCKY 1976

GREENUP COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	17	214,947	0.4	110	0.6
Total:	17	214,947	0.2	110	0.3

Production Ranking of County: 29

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
P.C. Coal Company Flatwoods, KY	0	68,516	68,516	0	7	7
D. D. & S. Coal Co. Sandy Hook, KY	0	49,000	49,000	0	25	25
W.S.H. Construction Co. Flemingsburg, KY	0	27,854	27,854	0	10	10
Greenup County Land Co. Ashland, KY	0	13,000	13,000	0	4	4
Claxton Energies, Inc. Grayson, KY	0	12,968	12,968	0	2	2

EASTERN KENTUCKY 1976

HARLAN COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	160	8,564,246	21.2	3,226	16.4
Surface	81	1,938,478	4.0	724	4.2
Total:	241	10,502,724	11.8	3,950	10.7

Production Ranking of County: 2

Projected Production Increase by 1985: .5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
U.S. Steel Corporation (U.S. Steel Corp.)	2,763,618	0	2,763,618	916	0	916
Eastover Mining Co. (Duke Power Co.)	1,498,457	0	1,498,457	487	0	487
Coal Resources Corp. (Flying Diamond Oil Co.)	997,000	0	997.000	133	0	133
Shackleford Coal Co., Inc. Holmes Mill, KY	410,010	0	410,010	195	0	195
Wisconsin Steel Coal Co. (International Harvester)	408,217	0	408,217	290	0	290

KENTUCKY LAND MINERAL OWNERS, HARLAN COUNTY, 1977

Company	Acres Owned			$ Assessment (Tax)		$ Assessment/Acre	
	Surface	Unmined Coal	Minimum Total	Surface*	Unmined Coal	Surface	Unmined Coal
IN STATE-CORPORATIONS							
Asher Coal Co. Pineville, KY	3,682	145	3,682	$220,000 (1,920)	$13,775 (43)	$ 60	$ 95
Hall Land & Mining Co. Harlan, KY	756	3,972	3,972	384,445 (3,129)	585,000 (1,842)	509	147
Clover Fork Coal Co. Kitts, KY	2,205	--	2,205	123,235 (1,061)	--	56	--
Ky. River Coal Corp. Lexington, KY	381	1,496	1,496	26,200 (211)	142,120 (448)	69	95
U & C Coal Corp. Grays Knob, KY	--	1,005	1,005	--	95,475 (301)	--	95
Shackleford Coal Co. Holmes Mill, KY	--	776	776	--	73,720 (232)	--	95
Dartmont Coal Co. Evarts, KY	--	700	700	--	66,500 (209)	--	95
Bonanza Trucking Co. Evarts, KY	567	550	567	48,550 (541)	52,250 (164)	86	95
Cardinal Gem Coal Co. Cardinal, KY	500	500	500	20,000 (181)	47,500 (150)	40	95
Harlan Central Coal Co. Grays Knob, KY	183	183	183	123,625 (1,165)	17,385 (55)	23	95
Bennett Land Co. Harlan, KY	133	133	133	30,000 (242)	12,635 (40)	226	95
Hosko Mining Co. Hyden, KY	100	100	100	10,000 (85)	9,500 (30)	100	95

(Continued)

Company	Acres Owned			$ Assessment (Tax)		$ Assessment/Acre	
	Surface	Unmined Coal	Minimum Total	Surface*	Unmined Coal	Surface	Unmined Coal
J & D Coal Co. Coalgood, KY	100	--	100	20,000 (165)	--	200	--
Insul Coal Mining Co. Harlan, KY	75	75	75	3,480 (31)	7,125 (22)	46	95
F & D Coal Mining Co. Coldiron, KY	67	67	67	8,600 (72)	6,365 (20)	128	95
Harlan Fuel Co. Harlan, KY	--	63	63	--	10,663 (34)	--	169
C & K Construction Co. Kettle Island, KY	50	50	50	17,000 (139)	4,750 (15)	340	95
Totals:	8,799	9,815	15,674	$915,810	$1,144,763	$111	$103
OUT-OF-STATE CORPORATIONS							
U.S. Steel Corp. Pittsburgh, PA	29,747	3,286	29,747	$6,086,651 (57,846)	$ 492,900 (1,553)	$204	$150
Kentenia Corp. Boston, MA	23,019	5,643	23,019	852,060 (7,818)	885,650 (2,790)	37	157
Harlan County Land Co. Pennington Gap, VA	18,060	20,709	20,709	5,625,030 (45,338)	2,905,044 (9,150)	311	140
Georgia-Pacific Corp. Augusta, GA	14,180	475	14,180	452,545 (10,104)	45,125 (142)	32	95
Eastover Land Co. (Duke Power Co.) Charlotte, NC	11,118	11,118	11,118	209,807 (--)	2,957,388 (9,316)	19	266
Coal Resources (Gulf & Western) Stamford, CT	8,000	--	8,000	368,133 (33,463)	--	46	--

(Continued)

Company	Acres Owned			$ Assessment (Tax)		$ Assessment/Acre	
	Surface	Unmined Coal	Minimum Total	Surface*	Unmined Coal	Surface	Unmined Coal
Harbert Construction Co. Birmingham, AL	6,979	6,979	6,979	$2,370,600 (19,107)	$663,024 (2,088)	$340	$ 95
U.S. Plywood Champion Paper, Inc. Hamilton, OH	6,840	6,840	6,840	1,795,775 (22,179)	649,800 (2,047)	263	95
International Harvester Chicago, IL	5,898	1,242	5,898	2,050,000 (37,987)	131,500 (414)	348	106
Penn-Va Corp. Philadelphia, PA	4,545	3,163	4,545	621,050 (3,447)	440,300 (1,387)	137	139
Clairfield Land Co. LaFollette, TN	3,558	168	3,558	300,000 (2,560)	140,000 (441)	84	833
KY & WV Coal & Mining Charleston, WV	3,060	3,060	3,060	100,370 (934)	290,700 (916)	33	95
Blackwood Land Co. Norton, VA	1,019	2,721	2,721	58,165 (479)	149,035 (469)	57	55
Harlan Lee Land Corp. St. Charles, VA	1,985	1,985	1,985	115,000 (1,006)	188,575 (594)	60	95
Jones Creek Mining & Man Baton Rouge, LA	1,610	760	1,610	40,000 (387)	72,200 (227)	25	95
Harlan Coal & Land Co. Wise, VA	1,000	1,000	1,000	63,000 (548)	95,000 (299)	63	95
Darby K. Coal Co. Cario, GA	108	108	108	492,000 (3,970)	10,260 (32)	4,556	95
Fordson Coal Co. Dearborn, MI	--	572	572	--	33,465 (106)	--	95
South Miss. Elect. Power Assoc. Hattiesburg, MS	--	554	554	--	52,630 (166)	--	95

(Continued)

Company	Acres Owned			$ Assessment (Tax)		$ Assessment/Acre	
	Surface	Unmined Coal	Minimum Total	Surface*	Unmined Coal	Surface	Unmined Coal
Mary Helen Coal Corp. Blackstone, VA	--	430	430	--	40,850 (129)	--	95
Sally B. Francis Land Co. LaFollette, TN	--	134	134	--	12,715 (40)	--	95
Totals:	140,726	70,947	146,767	$21,600,216 (247,174)	$10,256,161 (32,306)	$389	$149

*Surface values include equipment.

Source: Study by Joe F. Childers, Jr., of the Appalachian Center, University of Kentucky.

EASTERN KENTUCKY 1976

JACKSON COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	3	202,078	0.5	99	0.5
Surface	27	605,040	1.2	154	0.9
Total:	30	807,118	0.9	253	0.7

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Leeco, Inc. (Kaneb Services)	161,603	0	161,603	93	0	93
Jackson Co. Coal Operators Murray, KY	0	80,000	80,000	0	19	19
Jamieson Construction Co. London, KY	0	70,000	70,000	0	13	13
Virgil Templeton Coal Co. Dayton, OH	40,000	0	40,000	4	0	4
Horizon Coal Company Bernstadt, KY	0	35,000	35,000	0	5	5

EASTERN KENTUCKY 1976

JOHNSON COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	7	90,091	0.2	95	0.5
Surface	90	2,719,413	5.6	1,156	6.8
Total:	97	3,809,504	3.2	1,251	3.4

Production Ranking of County: 11

Projected Production Increase by 1985: .5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Addington Bros. Mining, Inc. (Ashland Oil Corp.)	0	1,314,331	1,314,331	0	217	217
Temco Coal Co., Inc. Paintsville, KY	0	392,387	392,387	0	210	210
Flat Top Mining, Inc. Sandy Hook, KY	0	161,231	161,231	0	98	98
Century, Inc. Paintsville, KY	0	147,913	147,913	0	66	66
United Energies, Inc. Paintsville, KY	0	95,497	95,497	0	84	84

EASTERN KENTUCKY 1976

KNOX COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	22	118,192	0.3	154	0.8
Surface	52	993,331	2.0	470	2.8
Total:	74	1,111,523	1.3	624	1.7

Production Ranking of County: 16

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Richland Coal Company Barbourville, KY	0	253,000	253,000	0	82	82
Cal-Glo Coal, Inc. Louisville, KY	98,512	52,455	150,967	85	15	100
Blue Gem Coal & Land Corp. Corbin, KY	0	113,078	113,078	0	49	49
Appalachian Constr. Co. (Kaneb Services)	0	112,770	112,770	0	29	29
H & P Coal Co., Inc. Gray, KY	0	100,726	100,726	0	38	38

EASTERN KENTUCKY 1976

KNOTT COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	115	2,785,781	6.9	1,659	8.4
Surface	62	1,535,067	3.2	462	2.7
Total:	177	4,320,848	4.9	2,121	5.8

Production Ranking of County: 9

Projected Production Increase by 1985: 1.75 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
National Mines Corp. (National Steel Corp.)	879,023	0	879,023	686	0	686
Falcon Coal Company (Falcon-Seaboard)	0	281,520	281,520	0	41	41
Johnson Coal & Constr. Co. Martin, KY	177,934	92,985	270,919	35	12	47
River Coal Company (Pro-Land, Inc.)	0	256,303	256,303	0	31	31
South-East Coal Company Irvin, KY	232,056	0	232,056	168	0	168

EASTERN KENTUCKY 1976

LAUREL COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	6	32,010	0.1	98	0.5
Surface	73	1,173,261	2.4	698	4.1
Total:	79	1,205,271	1.4	796	2.2

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Leeco, Inc. (Kaneb Services)	30,944	164,692	195,636	88	62	150
4-M Coal & Energy Co., Inc. London, KY	0	153,677	153,677	0	70	70
B.G. & M. Coal Company London, KY	0	123,446	123,446	0	67	67
Margin Coal Co., Inc. Bernstadt, KY	0	97,799	97,799	0	27	27
Mt. Clay, Inc. (Kaneb Services)	0	95,861	95,861	0	35	35

EASTERN KENTUCKY 1976

LAWRENCE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	35	1,166,374	2.4	471	2.8
Total:	35	1,166,374	1.3	471	1.3

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Addington Bros. Mining (Ashland Oil Corp.)	0	291,866	291,866	0	87	87
Ridgeway Fuel Corp. Prestonsburg, KY	0	224,698	224,698	0	89	89
Tebco, Inc. Bardstown, KY	0	188,608	188,608	0	33	33
Guardian Coal Co. Paintsville, KY	0	101,000	101,000	0	13	13
Chisholm Mining Assoc. Ashland, KY	0	69,800	69,800	0	10	10

EASTERN KENTUCKY 1976

LEE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	14	276,812	0.6	152	0.9
Total:	14	276,812	0.3	152	0.4

Production Ranking of County: 26

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Caudill Constr. Co., Inc. Manchester, KY	0	91,748	91,748	0	29	29
Mt. Strippers, Inc. Frankfort, KY	0	88,040	88,040	0	70	70
Consumers Elkhorn Coal Corp. Beattyville, KY	0	25,000	25,000	0	9	9
N & M Coal Company Beattyville, KY	0	20,000	20,000	0	3	3

EASTERN KENTUCKY 1976

LESLIE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	124	1,885,304	4.7	747	3.8
Surface	90	2,524,854	5.2	696	4.1
Total:	214	4,410,158	5.0	1,443	3.9

Production Ranking of County: 8

Projected Production Increase by 1985: .75 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Shamrock Coal Co. Knoxville, TN	1,350,000	0	1,350,000	70	0	70
Polls Creek Coal Co. Hazard, KY	0	435,684	435,684	0	35	35
Leeco, Inc. Stansbury and Co. (Kaneb Services)	221,499 0	0 160,319	381,818	111 0	0 57	168
Sandy Fork Mining Co. Knoxville, TN	0	300,100	300,100	0	54	54
R. R. Dawson Bridge Co. Lexington, KY	0	199,584	199,584	0	52	52

EASTERN KENTUCKY 1976

LETCHER COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	150	2,866,504	7.1	2,143	10.9
Surface	48	1,259,104	2.6	332	1.9
Total:	198	4,125,608	4.6	2,475	6.7

Production Ranking of County: 10

Projected Production Increase by 1985:
1.35 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION Underground	PRODUCTION Surface	PRODUCTION Total	EMPLOYMENT Underground	EMPLOYMENT Surface	EMPLOYMENT Total
South-East Coal Co. Irvine, KY	756,700	0	756,700	437	0	437
Scotia Coal Co. (Blue Diamond Coal Co.)	646,086	0	646,086	763	0	763
Tackett & Manning Coal Neon, KY	0	572,034	572,034	0	26	26
Beth-Elkhorn Corp. (Bethehem Steel Corp.)	541,978	0	541,978	297	0	297
A & E Coal Co. Jackhorn, KY	150,394	0	150,394	24	0	24

EASTERN KENTUCKY 1976

McCREARY COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	5	362,419	0.9	260	1.3
Surface	8	244,850	0.5	84	0.5
Total:	13	607,269	0.7	344	0.9

Production Ranking of County: 19

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ryans Creek Coal Co., Inc. Oneida, TN	180,449	0	180,449	38	0	38
Stearns Mining Co. (Blue Diamond Coal Co.)	176,102	0	176,102	218	0	218
Quality State Coal Co. Whitley City, KY	0	90,153	90,153	0	30	30
Burch & Son Co., Inc. Burnside, KY	0	59,347	59,347	0	21	21
West Coal Corp. Oneida, TN	0	44,225	44,225	0	15	15

EASTERN KENTUCKY 1976

MAGOFFIN COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	9	71,707	0.2	68	0.4
Surface	48	2,171,237	4.5	902	5.1
Total:	57	2,242,944	2.5	970	2.6

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Wolverine Coal Co. Salyersville, KY	0	590,000	590,000	0	101	101
Crest Coal Co., Inc. Salyersville, KY	0	302,453	302,453	0	311	311
Ken-Lick Coal Co. Salyersville, KY	0	272,230	272,230	0	38	38
Middle States Coal Co. David, KY	0	221,000	221,000	0	124	124
Branham & Baker Coal Co. Prestonsburg, KY	0	194,579	194,579	0	92	92

EASTERN KENTUCKY 1976

MARTIN COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	29	2,796,512	6.9	1,099	5.6
Surface	66	5,363,461	11.0	2,026	11.9
Total:	95	8,159,973	9.2	3,125	8.5

Production Ranking of County: 3

Projected Production Increase by 1985: 4.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Martin County Coal Corp. Wolf Creek Collieries Co. (St. Joe Minerals, Inc.)	909,225 910,030 1,819,255	301,544 0 301,544	1,210,769 910,038 2,120,799	273 350 623	234 0 234	507 350 857
Martiki Coal Corp. (Mapco, Inc.)	0	1,150,370	1,150,370	0	333	333
Peter Cave Coal Co., Inc. Lovely, KY	477,129	0	477,129	190	0	190
Longbranch Coal Co. Roanoke, VA	0	468,717	468,717	0	258	258
Daniel Construction Co. Lovely, KY	0	444,051	444,051	0	138	138

EASTERN KENTUCKY 1976

MENIFEE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.000	0	0.00
Surface	2	2,550	0.005	6	0.04
Total:	2	2,550	0.003	6	0.02

Production Ranking of County: 31

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Maze, J.W. Pipe, Inc. Frenchburg, KY	0	2,550	2,550	0	6	6
H.R.N. Coal Co. Pomeroyton, KY	0	0	0	0	0	0

EASTERN KENTUCKY 1976

MORGAN COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	41	604,393	1.2	376	2.2
Total:	41	604,393	0.7	376	1.0

Production Ranking of County: 20

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Collins & May Mining Co. Blaze, KY	0	265,435	265,435	0	72	72
Frederick & Kelley, Inc. Frederick Constr. Co. White Oak, KY	0	56,085	56,085	0	34	34

EASTERN KENTUCKY 1976

OWSLEY COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	1	30,000	0.1	8	0.04
Surface	21	264,595	0.5	176	1.00
Total:	22	294,595	0.3	184	0.50

Production Ranking of County: 25

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Phil Young Coal Co. Manchester, KY	0	52,301	52,301	0	33	33
Devcol, Inc. Lexington, KY	0	40,668	40,668	0	56	56
U.S. Mining & Expl. Nat. Resources Booneville, KY	0	36,700	36,700	0	30	30
Bishop Coal Co. (Continental Oil Co.)	30,000	0	30,000	8	0	8
Clark & Hirt Coal Co. Osteen, FL	0	30,000	30,000	0	8	8

EASTERN KENTUCKY 1976

PERRY COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	70	2,366,256	5.9	1,319	6.7
Surface	150	5,106,995	11.0	1,933	11.3
Total:	220	7,473,251	8.4	3,252	8.8

Production Ranking of County: 4

Projected Production Increase by 1985: 2.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Blue Diamond Mining, Inc. (Blue Diamond Coal Co.)	891,153		891,153	652	0	652
River Processing Co. (Pargas, Inc.)	0	743,027	743,027	0	412	412
Star Fire Coals, Inc. Bulan, KY	0	726,036	726,036	0	388	388
River Coal Co. (Pro-Land, Inc.)	0	534,579	534,579	0	183	183
Ray Coal Co. Hazard, KY	310,213	223,622	533,835	93	116	209

KENTUCKY LAND-MINERAL OWNERS, PERRY COUNTY, 1977

Company	Acres Owned			$ Assessment (Tax)		$ Assessment (Tax)/Acre	
	Surface	Unmined Coal	Minimum Total	Surface	Unmined Coal	Surface	Unmined Coal
IN-STATE CORPORATIONS							
Ky. River Coal Corp. Lexington, KY	29,685	26,272	29,685	$ 657,700 (10,216)	$2,979,500 (9,385)	$ 22 (34¢)	$113 (36¢)
Hazard Coal Corp. Hazard, KY	3,947	2,520	3,947	150,000 (1,936)	217,800 (686)	38 (49¢)	86 (27¢)
J.D. Hughes Lumber Co. Lexington, KY	3,000	3,000	3,000	26,000 (208)	525,000 (1,654)	9 (7¢)	175 (55¢)
Marlowe Land Co. Lexington, KY	--	2,500	2,500	--	437,500 (1,378)	--	175 (55¢)
Cooley Coal & Land Co. McDowell, KY	--	2,350	2,350	--	266,900 (841)	--	114 (36¢)
Kycoga Land Co. Hazard, KY	--	1,633	1,633	--	86,000 (271)	--	53 (17¢)
Abijah Coal Co. Lexington, KY	44	687	687	75,900 (618)	9,600 (30)	1,725 (14)	14 (4¢)
Franklin Real Estate (Ky. Power Co.) Ashland, KY	658	658	658	269,000 (2,045)	115,150 (363)	409 (3)	175 (55¢)
Whitaker Coal Corp. Hazard, KY	604	262	604	60,000 (491)	13,100 (41)	99 (81¢)	50 (16¢)
Blue Grass Mining Co. Lexington, KY	--	349	349	--	61,100 (192)	--	175 (55¢)
East Ky. Land Co. Chavies, KY	150	--	150	8,500 (68)	--	57 (46¢)	--
Frederick & May Lumber West Liberty, KY	120	--	120	2,500 (22)	--	21 (19¢)	--

(Continued)

Company	Acres Owned			$ Assessment (Tax)		$ Assessment (Tax)/Acre	
	Surface	Unmined Coal	Minimum Total	Surface	Unmined Coal	Surface	Unmined Coal
Ray Coal Corp. Hazard, KY	20	--	20	238,400 (14,525)	--	NA	--
Totals:	38,228	40,231	45,703	1,488,000 (30,129)	4,711,650 (14,841)		
OUT-OF-STATE CORPORATIONS							
Virginia Iron, Coal & Coke (Amer. Natural Resources)	6,510	41,970	41,970	$ 288,500 (2,780)	$2,571,250 (8,100)	$44 (43¢)	$61 (19¢)
Cities Service Oil Co. Tulsa, OK	2,493	--	2,493	600 (5)	--	24¢ (.002¢)	--
Blue Diamond Coal Co. Knoxville, TN	--	1,785	1,785	--	227,300 (716)	--	127 (40¢)
Fordson Coal Co. Dearborn, MI	--	1,416	1,416	--	98,400 (310)	--	69 (22¢)
Green Brook Coals Huntington, WV	1,100	1,100	1,100	92,500 (3,460)	8,800 (28)	84 (3)	8 (3¢)
Montgomery Coal Co. Bristol, VA	1,070	445	1,070	82,000 (649)	35,950 (113)	77 (61¢)	81 (25¢)
River Processing Co. Waldorf, MD	1,051	--	1,051	968,900 (65,831)	--	922 (63)	--
McCall Land Co. Bristol, VA	--	600	600	--	30,000 (95)	--	50 (16¢)
Falcon Coal Co. (Falcon Seaboard) Houston, TX	281	--	281	201,500 (7,217)	--	717 (26)	--
Resource Coal Co. Litchfield, MN	162	--	162	16,200 (5,866)	--	100 (36)	--
Consumers Coal Co. Dayton, OH	100	--	100	14,400 (115)	--	144 (1)	--

(Continued)

Company	Acres Owned			$ Assessment (Tax)		$ Assessment (Tax)/Acre	
	Surface	Unmined Coal	Minimum Total	Surface	Unmined Coal	Surface	Unmined Coal
Tesoro Coal Co. (Tesoro Petroleum Co.) Houston, TX	100	--	100	518,200* (18,060)	--	--	--
Certicoals, Inc. Charleston, WV	--	--	--	272,300* (2,299)	--	--	--
Indian Head Mining Co. (Pro-Land, Inc.) New York, NY	--	--	--	195,000* (3,769)	--	--	--
Totals:	12,866	47,316	52,128	1,664,600 (85,923)	2,971,700 (9,362)		

*Not included in total because of uncertainty as to acres owned.

Source: Study by Joe F. Childers, Jr. of the Appalachian Center, University of Kentucky.

EASTERN KENTUCKY 1976

PIKE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	407	14,219,923	35.2	6,807	34.5
Surface	138	4,782,078	10.0	1,141	6.7
Total:	545	19,002,001	21.4	7,948	21.6

Production Ranking of County: 1

Projected Production Increase by 1985: 8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Beth-Elkhorn Corp. (Bethlehem Steel Corp.)	1,455,200	0	1,455,200	835	0	835
Eastern Coal Corp. (Pittston Co.)	892,319	0	892,319	554	0	554
Ky. Carbon Corp. (Carbon Fuel Corp.)	801,500	0	801,500	492	0	492
Daniels, Morris & Marshall Majestic, KY	0	601,600	601,600	0	44	44
Pikeville Coal Co. (Steel Co. of Canada)	580,420	0	580,420	264	0	264

EASTERN KENTUCKY 1976

PULASKI COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	6	139,610	0.4	77	0.4
Surface	8	321,679	0.7	118	0.7
Total:	14	461,289	0.5	195	0.5

Production Ranking of County: 21

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ikerd & Bandy Co., Inc. (Kaneb Services, Inc.)	0	240,468	240,468	0	74	74
Mt. Victory Coal Co., Inc. Somerset, KY	139,610	0	139,610	77	0	77
The Rockcastle Co. Somerset, KY	0	40,738	40,738	0	16	16
Southland Contractors Somerset, KY	0	35,000	35,000	0	21	21
T & T Coal Co. London, KY	0	3,729	3,729	0	4	4

EASTERN KENTUCKY 1976

ROCKCASTLE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	1	500	0.001	2	0.01
Surface	9	54,327	0.110	57	0.33
Total:	10	54,827	0.100	59	0.20

Production Ranking of County: 30

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Texas Pioneer Coal Co. (Pioneer Corp.)	0	27,042	27,042	0	16	16
Wyandot Corp. Tateville, KY	0	13,198	13,198	0	5	5
Bowling Construction Co. Mt. Vernon, KY	0	6,889	6,889	0	17	17
R.B.S., Inc. Cincinnati, OH	0	5,368	5,368	0	4	4
Queen City Constr. & Coal Burnside, KY	0	773	773	0	3	3

EASTERN KENTUCKY 1976

WAYNE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	4	168,551	0.3	53	0.3
Total:	4	168,551	0.2	53	0.1

Production Ranking of County: 28

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
West Coal Corp. Oneida, TN	0	124,519	124,519	0	27	27
Ikerd-Bandy Co., Inc. (Kaneb Services)	0	23,288	23,288	0	9	9
Wayne County Coal Corp. McDowell, KY	0	19,737	19,737	0	14	14
Anbros, Inc. Pineknot, KY	0	1,007	1,007	0	3	3

EASTERN KENTUCKY 1976

WHITLEY COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	6	108,534	0.3	65	0.3
Surface	93	1,389,424	2.9	991	5.8
Total:	99	1,497,958	1.7	1,056	2.9

Production Ranking of County: 13

Projected Production Increase by 1985:
0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Savoy Coal, Inc. Williamsburg, KY	0	406,020	406,020	0	193	193
Cal Glo Coal, Inc. Louisville, KY	105,134	99,185	204,319	48	51	99
B & C McCullah Bros. Nevisdale, KY	0	72,197	72,197	0	25	25
Whitley Development Corp. Williamsburg, KY	0	69,443	69,443	0	16	16
Greer Bros. & Woodson Corbin, KY	0	69,032	69,032	0	82	82

EASTERN KENTUCKY 1976

WOLFE COUNTY

	Number Mines	Coal Production	% of KY(E) Production	Coal Employment	% of KY(E) Employment
Underground	0	0	0.0	0	0.0
Surface	11	345,496	0.7	61	0.4
Total:	11	345,496	0.4	61	0.2

Production Ranking of County: 23

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Drake Coal Co. Elizabethtown, KY	0	140,000	140,000	0	12	12
Al Mining Co. Bulan, KY	0	89,211	89,211	0	15	15
Arby Coal Co. Hazel Green, KY	0	20,000	20,000	0	2	2
Cable Coal Co. Campton, KY	0	20,000	20,000	0	5	5
Watts & Cole Coal Co. Ivel, KY	0	20,000	20,000	0	6	6

WESTERN KENTUCKY 1976

BUTLER COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	1	54,021	0.2	14	0.2
Surface	29	874,321	3.0	272	6.0
Total:	30	928,342	1.7	286	2.4

Production Ranking of County: 8

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
K & D Corporation Evansville, IN	0	100,052	100,052	0	25	25
Jessup Bros., Inc. Greenville, KY	0	95,728	95,728	0	17	17
Buck Knob Coal Co., Inc. Greenville, KY	0	71,602	71,602	0	7	7
Middle, Ky. Construction Co., Inc.	0	64,116	64,116	0	21	21
B & B Coal Co. Morgantown, KY	0	59,476	59,476	0	12	12

WESTERN KENTUCKY 1976

CHRISTIAN COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.0	0	0.0
Surface	5	219,595	0.7	56	1.2
Total:	5	219,595	0.4	56	0.4

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Larkins Coal Co., Inc. White Plains, KY	0	156,567	156,567	0	31	31
Margarita Fuels, Inc. Madisonville, KY	0	46,734	46,734	0	13	13
J & G Coal Company White Plains, KY	0	8,702	8,702	0	5	5
Double G. Mining Co., Inc. Dawson Springs, KY	0	7,592	7,592	0	2	2
Christian Coal Corp.	0	0	0	0	5	5

WESTERN KENTUCKY 1976

DAVIESS COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.0	0	0.0
Surface	6	1,004,726	3.3	148	3.2
Total:	6	1,004,726	1.8	148	1.3

Production Ranking of County: 6

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Green Coal Co. Owensboro, KY	0	902,103	902,103	0	111	111
L. K. Chapman, Inc. Leiwsport, KY	0	57,039	57,039	0	7	7
Jim Bob Mining Co. Hartford, KY	0	25,302	25,302	0	7	7
Ohio River Coal Co. Philpot, KY	0	14,405	14,405	0	7	7
Hatfield Coal Co. Philpot, KY	0	3,588	3,588	0	6	6

WESTERN KENTUCKY 1976

EDMONSON COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.0	0	0.0
Surface	1	0	0.0	0	0.0
Total:	1	0	0.0	0	0.0

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
James Sullivan Mining Bowling Green, KY	0	0	0	0	0	0

WESTERN KENTUCKY 1976

GRAYSON COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.00	0	0.0
Surface	3	11,311	0.03	10	0.2
Total:	3	11,311	0.02	10	0.1

Production Ranking of County: 13

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Underground Recovery, Inc. Bowling Green, KY	0	10,224	10,224	0	4	4
Williams-Crabtree Constr. Co., Inc. Glasgow, KY	0	1,087	1,087	0	4	4
Glenn-David, Inc. Leitchfield, KY	0	0	0	0	2	2

WESTERN KENTUCKY 1976

HANCOCK COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.0	0	0.0
Surface	5	130,602	0.4	38*	0.8
Total:	5	130,602	0.2	38	0.3

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
L.R. Chapman, Inc. Lewisport, KY	0	113,710	113,710	0	25	25
Circle B Coal Company Hartford, KY	0	15,392	15,392	0	10	10
Hamco Owensboro, KY	0	1,500	1,500	0	3	3
Zellers Construction Co.	0	0	0	0	0	0

*Error in 1976 Kentucky Annual Report.

WESTERN KENTUCKY 1976

HENDERSON COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	2	972,513	4.0	154	2.2
Surface	0	0	0.0	0	0.0
Total:	2	972,513	1.8	154	1.3

Production Ranking of County: 7

Projected Production Increase by 1985: 3.2 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Webster County Coal Corp. (Mapco, Inc.)	892,653	0	892,653	143	0	143
Peabody Coal Company (Newmont Mining, NY)	79,860	0	79,860	11	0	11

WESTERN KENTUCKY 1976

HOPKINS COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	8	5,294,839	22.1	1,465	21.1
Surface	41	4,480,366	14.7	672	14.8
Total:	49	9,775,205	18.0	2,137	18.6

Production Ranking of County: 2

Projected Production Increase by 1985: 1.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Island Creek Coal Co. (Occidental Petroleum Corp.)	2,860,286	0	2,860,286	808	0	808
Pittsburg & Midway Coal Mining Co. (Gulf Oil Corp.)	709,396	1,595,459	2,304,855	161	180	341
Cimarron Coal Corp. Madisonville, KY	0	1,440,063	1,440,063	0	98	98
South Hopkins Coal Co. Madisonville, KY	1,024,483	0	1,024,483	185	0	185
Zeigler Coal Co. (Houston Natural Gas Corp.)	575,124	0	575,124	273	0	273

WESTERN KENTUCKY 1976

McLEAN COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.0	0	0.0
Surface	5	751,381	2.4	130	2.9
Total:	5	751,381	1.4	130	1.1

Production Ranking of County: 9

Projected Production Increase by 1985: 2.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Brown Badgett, Inc. (Natomas, Inc.)	0	387,024	387,024	0	50	50
Center Coal, Inc. Madisonville, KY	0	241,792	241,792	0	48	48
Corum & Co., Inc. Madisonville, KY	0	86,565	86,565	0	22	22
Dawn Coal Co. Madisonville, KY	0	36,000	36,000	0	10	10

WESTERN KENTUCKY 1976

MUHLENBERG COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	7	4,947,484	20.7	1,455	21.0
Surface	13	16,226,907	53.4	2,017	44.5
Total:	20	21,174,391	39.0	3,472	30.3

Production Ranking of County: 1

Projected Production Increase by 1985: 7.7 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Gibraltar Coal Corp. (Peabody Coal-Amax Coal)	0	2,925,112	2,925,112	0	378	378
Peabody Coal Company (Peabody Holding Corp.)	3,395,894	7,480,997	10,876,891	1,105	945	1,960
Amax Coal Co. (Amax, Inc.) Greenwich, CT	0	2,489,843	2,489,843	0	314	314
Pittsburg & Midway Coal Mining Co. (Gulf Oil Corp.)	663,163	962,460	1,625,623	178	131	309
Thornberry Construction Co. Madisonville, KY	0	611,741	611,741	0	31	31

WESTERN KENTUCKY 1976

OHIO COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	4	3,183,190	13.3	1,362	19.6
Surface	35	6,177,605	20.3	1,007	22.2
Total:	39	9,360,795	17.2	2,369	20.6

Production Ranking of County: 3

Projected Production Increase by 1985: 7.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	3,183,190	4,025,504	7,208,594	1,362	492	1,854
Weebro, Inc. Greenville, KY	0	357,576	357,576	0	66	66
Green Coal Company Owensboro, KY	0	578,745	578,745	0	85	85
Southwind Coal Min. Co., Inc. Louisville, KY	0	167,113	167,113	0	30	30
Circle B. Coal Company Hartford, KY	0	196,339	196,339	0	50	50

WESTERN KENTUCKY 1976

UNION COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	7	7,632,321	32.0	2,278	32.8
Surface	0	0	00.0	0	00.0
Total:	7	7,632,321	14.0	2,278	19.9

Production Ranking of County: 4

Projected Production Increase by 1985: 1.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Co.)	4,077,839	0	4,077,839	984	0	984
Island Creek Coal Co. (Occidental Petroleum Corp.)	2,841,482	0	2,841,482	1,096	0	1,096
Pyro Mining Company Sturgis, KY	713,000	0	713,000	198	0	198

WESTERN KENTUCKY 1976

WARREN COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	0	0	0.00	0	0.0
Surface	2	14,620	0.05	18	0.4
Total:	2	14,620	0.03	18	0.2

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Riggsbee Constr. Co., Inc. Bowling Green, KY	0	9,500	9,500	0	9	9
Jim Bob Mining Co., Inc. Bowling Green, KY	0	5,120	5,120	0	9	9

WESTERN KENTUCKY 1976

WEBSTER COUNTY

	Number Mines	Coal Production	% of KY(W) Production	Coal Employment	% of KY(W) Employment
Underground	1	1,803,988	7.5	215	3.0
Surface	18	502,717	1.7	162	3.6
Total:	19	2,306,705	4.2	377	3.3

Production Ranking of County: 5

Projected Production Increase by 1985: 2.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Webster County Coal Corp. (Mapco, Inc.)	1,803,988	0	1,803,988	215	0	215
B & T Coal Company Providence, KY	0	87,532	87,532	0	17	17
Tapp Coal Co., Inc. Henderson, KY	0	78,118	78,118	0	16	16
Cord Coal Co., Inc. Providence, KY	0	71,153	71,153	0	12	12
C & O Coal Company Madisonville, KY	0	67,944	67,944	0	15	15

OHIO 1976

ATHENS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	3	93,892	0.3	*	
Total:	3	93,892	0.2		

Production Ranking of County: 22

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Wharton Supply Co., Inc. Cheshire, OH	0	77,667	77,667	0	10	10
Hem Coal Co., Inc. Bern, OH	0	14,957	14,957	0	10	10
Withem & Canter Trimble, OH	0	1,268	1,268	0	*	*

*Employment not fully reported.

OHIO 1976

BELMONT COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	7	6,912,178	41.4	3,633	
Surface	71	6,416,106	21.3	*1,276	
Total:	78	13,328,284	28.5	4,909	

Production Ranking of County: 1

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
North American Coal Corp.	3,140,793	0	3,140,793	1,525	0	1,525
Nacco Mining Company	1,385,379	0	1,385,379	741	0	741
(N. American Coal Corp.)	4,526,172		4,526,172	2,266		2,266
Consolidation Coal Co. (Continental Oil Co.)	941,360	2,167,279	3,108,639	576	304	880
Marietta Coal Company Cambridge, OH	0	1,116,445	1,116,445	0	145	*145
Saginaw Mining Company Rickland, OH	731,916	0	731,916	258	0	258
Youghioghney & Ohio Coal (Youghioghney & Ohio Coal)	712,730	0	712,730	533	0	533

*Employment not fully reported.

OHIO 1976

CARROLL COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	13	287,445	0.9	*89	
Total:	13	287,445	0.6	*89	

Production Ranking of County: 18

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
James Bros. Coal Co. Rose, OH	0	126,323	126,323	0	*39	*39
Industrial Mining Co. Lisbon, OH	0	62,354	62,354	0	8	8
R & R Coal Company Lisbon, OH	0	31,066	31,066	0	10	10

*Employment not fully reported.

OHIO 1976

COLUMBIANA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	86,246	0.5	*32	
Surface	37	932,915	3.1	*280	
Total:	40	1,019,161	2.2	*312	

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
C & W. Mining Lisbon, OH	72,034	174,624	246,658	32	38	70
Ferris Coal Company E. Palestine, OH	0	158,243	158,243	0	30	30
K & R Enterprises Canfield, OH	0	118,376	118,376	0	40	40
Industrial Mining Co. Lisbon, OH	0	90,963	90,963	0	44	44
Buckeye Coal Mining Co. Lisbon, OH	0	60,445	60,445	0	25	25

*Employment not fully reported.

OHIO 1976

COSHOCTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	443,085	2.6	309	
Surface	15	1,281,172	4.3	291	
Total:	16	1,724,257	3.7	600	

Production Ranking of County: 7

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Corp.)	443,085	684,016	1,127,101	309	121	430
Ohio Amco, Inc. Coshocton, OH	0	145,355	145,355	0	34	34
Wills Creek Energy Co. Coshocton, OH	0	112,326	112,326	0	34	34
Alexander Coal & Supply Bolivar, OH	0	91,407	91,407	0	9	9
McFo Company Morristown, OH	0	63,094	63,094	0	23	23

OHIO 1976

GALLIA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	4	401,593	1.3	97	
Total:	4	401,593	0.8	97	

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Crown City Mining Co. Crown City, OH	0	253,115	253,115	0	41	41
C.A.B. Coal Corp. Cheshire, OH	0	82,176	82,176	0	21	21
Universal Coal & Energy Co. (American Industries & Resources Corp.)	0	61,302	61,302	0	31	31
Cavalier Coal Mine Co. Salem, VA	0	5,000	5,000	0	4	4

OHIO 1976

GUERNSEY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	6,151	0.04	14	
Surface	11	700,272	2.30	121*	
Total:	12	706,423	1.50	135*	

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
R. & F. Coal Co. (Gulf Resources & Chemical Co.)	0	320,137	320,137	0	50	50
Ohio River Collieries Co. Bennock, OH	0	252,556	252,556	0	42	42
Schalsbach Coal Co. Baltic, OH	0	79,972	79,972	0	16	16
Rossiter, J.E. Constr. Jackson, OH	0	14,207	14,207	0	7	7
Skinner, Philip L. Inc. Morristown, OH	0	13,950	13,950	0	3	3

*Employment not fully reported.

OHIO 1976

HARRISON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	5	2,979,088	17.8	1,598	
Surface	21	3,823,012	12.7	472	
Total:	26	6,802,100	14.5	2,070	

Production Ranking of County: 2

Projected Production Increase by 1985: 1.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Oil) (Continental Oil Co.)	1,609,671	2,974,313	4,583,984	766	353	1,059
Youghiogheny & Ohio Coal Co. Cleveland, OH	1,369,417	0	1,369,417	892	0	892
Puskarich Mining Co. Cravat Coal Co. Holloway, OH	0	365,439	365,439	0	49	49
Bedway Coal Company Adena, OH	0	127,495	127,495	0	12	12
W.B. Coal Company Steubenville, OH	0	95,039	95,039	0	22	22

OHIO 1976

HOCKING COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	9	840,468	2.8	437*	
Total:	9	840,468	1.8	437*	

Production Ranking of County: 13

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
C.A.B. Coal Corp. Cheshire, OH	0	219,860	219,860	0	26	26
Valley Coal Corp.	0	219,535	219,535	0	*	*
Raven-Hacking Coal Corp. Gallipolis, OH	0	108,754	108,754	0	336	336
Nutter Bros. Coal Co., Inc. New Straitsville, OH	0	103,657	103,657	0	10	10
Boyle Coal Co., Inc. New Straitsville, OH	0	55,870	55,870	0	16	16

*Employment not fully reported.

OHIO 1976

HOLMES COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	7	559,358	1.8	*55	
Total:	7	559,358	1.2	*55	

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Holmes Limestone Co. Berlin, OH	0	370,107	370,107	0	*19	*19
Hardy Coal Co. Sugarcreek, OH	0	152,076	152,076	0	23	23
Schlabach Coal Co. Baltic, OH	0	37,175	37,175	0	13	13

*Employment not fully reported.

OHIO 1976

JACKSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	102,976	0.6	21	
Surface	19	838,225	2.8	236	
Total:	22	941,201	2.0	257*	

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Waterloo Coal Co., Inc. Oak Hill, OH	0	260,383	260,383	0	31	31
LaMay Coal Co., Inc. Jackson, OH	0	104,504	104,504	0	8	8
Stewart & Zinn Coal Co. Galliopolis, OH	87,156	0	87,156	15	0	15
J.R. Coal Corp. Bloomfield, OH	0	78,266	78,266	0	33	33
International Midwest Mining Co. Jackson, OH	0	68,590	68,590	0	39	39

*Employment not fully reported.

OHIO 1976

JEFFERSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	407,226	2.4	397	
Surface	39	3,272,029	10.9	*632	
Total:	41	2,679,255	7.9	*1,029	

Production Ranking of County: 4

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ohio Coal & Constr. Corp. (Amer. Industries & Resources)	0	876,813	876,813	0	88	88
Consolidation Coal Co. (Continental Oil Co.)	18,200	429,871	448,071	113	98	211
North American Coal Corp. Cleveland, OH	389,026	0	389,026	284	0	284
Boich Mining Company Bloomingdale, OH	0	257,822	257,822	0	68	68
Schiappa Coal Company Steubenville, OH	0	233,390	233,390	0	39	39

*Employment not fully reported.

OHIO 1976

LAWRENCE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	198,892	0.7	90	
Total:	5	198,892	0.4	90	

Production Ranking of County: 21

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Pecker Run Coal Co. Symmes, OH	0	86,920	86,920	0	21	21
Tripple Contracting Inc. Pedro, OH	0	54,731	54,731	0	25	25
Belville Mining Co., Inc. Oak Hill, OH	0	30,043	30,043	0	11	11
Universal Coal & Supply Co. Mason, OH	0	15,889	15,889	0	20	20
Brokard Mining & Development Pedro, OH	0	11,309	11,309	0	13	13

OHIO 1976

LICKING COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.000	0	0.0
Surface	1	606	0.002	3	
Total:	1	606	0.001	3	

Production Ranking of County: 26

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Becko Construction Co. Zanesville, OH	0	606	606	0	3	3

OHIO 1976

MAHONING COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	8	266,637	0.9	*79	
Total:	8	266,637	0.5	*79	

Production Ranking of County: 19

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Keller Mines, Inc. Alliance, OH	0	73,498	73,498	0	23	23
East Fairfield Coal Co. N. Lima, OH	0	55,889	55,889	0	13	13
Carbon Limestone Co. (Moore McCormack Resources Inc.)	0	55,366	55,366	0	*	*
Thompson Bros. Mining Co. New Springfield, OH	0	37,663	37,663	0	15	15
Erskine Contracting Corp. Poland, OH	0	27,728	27,728	0	5	5

*Employment not fully reported.

OHIO 1976

MEIGS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	1,722,881	10.3	1,421	
Surface	0	0	0.0	0	
Total:	2	1,722,881	3.7	1,421	

Production Ranking of County: 8

Projected Production Increase by 1985: 4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Southern Ohio Coal (Utility) (American Electric Power Service Corp.)	1,722,881	0	1,722,881	1,421	0	1,421

OHIO 1976

MONROE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	1,475,351	9.9	1,386	
Surface	0	0	0.0	0	
Total:	2	1,475,351	3.2	1,386	

Production Ranking of County: 10

Projected Production Increase by 1985: 4.2 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Quarto Mining Co. (North American Coal Corp.)	1,475,351	0	1,475,351	1,386	0	1,386

OHIO 1976

MORGAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	82,307	0.3	*	
Total:	1	82,307	0.2		

Production Ranking of County: 24

Projected Production Increase by 1985: 1.7 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Central Ohio Coal Co. (American Electric Power Service Corp.)	0	82,307	82,307	0	*	*

*Employment not fully reported.

OHIO 1976

MUSKINGUM COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	198,450	1.2	*	
Surface	20	5,815,680	19.3	*	
Total:	22	6,014,130	12.8		

Production Ranking of County: 3

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Central Ohio Coal Co. (American Electric Power)	0	3,404,164	3,404,164	0	648	648
Sidewell Bros., Inc. Zanesville, OH	0	935,484	935,484	0	120	120
Simco-Peabody Coal Co. (Peabody Holding Corp.)	185,450	701,675	887,125	*	*145	*145
Gilbert Fuel Co. Zanesville, OH	0	238,184	238,184	0	78	78
Muskingum Valley Augering Co. Zanesville, OH	0	105,952	105,592	0	24	24

*Employment not fully reported.

OHIO 1976

NOBLE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	
Surface	3	246,592	0.8	65	
Total:	3	246,592	0.5	65	

Production Ranking of County: 20

Projected Production Increase by 1985: 2.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Orange Coal Co. Dexter City, OH	0	169,868	169,868	0	30	30
B. & N. Coal Corp. Dexter City, OH	0	59,445	59,445	0	28	28
Ohio Coal & Constr. Corp. (Amer. Industries and Research Corp.)	0	17,279	17,279	0	7	7

OHIO 1976

PERRY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	1,815,007	10.9	609	
Surface	9	460,065	1.5	*	
Total:	10	2,275,072	4.9	*	

Production Ranking of County: 5

Projected Production Increase by 1985: 1.7 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peabody Coal Company (Peabody Holding Corp.)	1,815,007	0	1,815,007	609	0	609
Crooksville Coal Co. Crooksville, OH	0	129,119	129,119	0	44	44
Cravat Coal Co. (Cravat Coal Co.)	0	124,940	124,940	0	*10	*10
Wells Mining Co. Steubenville, OH	0	118,535	118,535	0	22	22
Star Mining Co., Inc. Junction City, OH	0	65,512	65,512	0	12	12

*Employment not fully reported.

OHIO 1976

STARK COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	
Surface	14	449,057	1.5	163	
Total:	14	449,057	0.9	*163	

Production Ranking of County: 16

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Wilmont Mining Co. Wilmont, OH	0	201,082	201,082	0	67	67
Burrows Mining Co. Canton, OH	0	95,323	95,323	0	39	39
Magnolia Mining Co. Canton, OH	0	51,779	51,779	0	19	19

*Employment not fully reported.

OHIO 1976

TUSCARAWAS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	23,270	0.1	9	
Surface	27	1,492,733	4.9	*319	
Total:	28	1,516,003	3.2	*328	

Production Ranking of County: 9

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Hardy Coal Co. Sugar Creek, OH	0	607,115	607,115	0	75	75
Eberhart Coal Co. North Industry, OH	0	206,282	206,282	0	93	93
Reclamation & Air Survey, Inc. New Philadelphia, OH	0	104,410	104,410	0	17	17
White Ash Coal Co. New Philadelphia, OH	0	104,410	104,410	0	17	17
Stahl Ray Port Washington, OH	0	72,048	72,048	0	25	25

*Employment not fully reported.

OHIO 1976

VENTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	544,654	3.3	462	
Surface	14	1,515,582	5.0	*192	
Total:	16	2,060,236	4.4	*654	

Production Ranking of County: 6

Projected Production Increase by 1985: 1.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Southern Ohio Coal Co. (American Electric Power Service Corp.)	437,025	0	437,025	447	0	447
Jaymar Coal Co. Cheshire, OH	0	433,740	433,740	0	22	22
Benedict, Inc. McArthur, OH	0	240,471	240,471	0	53	53
Quality Coal Co. Clinton, OH	0	176,092	176,092	0	6	6
J. T. Corporation Wheelersburg, OH	0	161,717	161,717	0	28	28

*Employment not fully reported.

OHIO 1976

WASHINGTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	
Surface	1	84,629	0.3	21	
Total:	1	84,269	0.2	21	

Production Ranking of County: 23

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
B&N Coal, Inc. Dexter City, OH	0	84,269	84,269	0	21	21

OHIO 1976

WAYNE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.00	0	
Surface	1	37,430	0.10	*	
Total:	1	34,430	0.08		

Production Ranking of County: 25

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Holmes Limestone Co.	0	37,430	37,430	0	*	*

*Employment not fully reported.

PENNSYLVANIA 1976

ALLEGHENY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	9	3,321,317	7.5	1,594	6.6
Surface	29	603,243	1.5	159	1.7
Total:	38	3,924,551	4.6	1,753	5.2

Production Ranking of County: 9

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Republic Steel Corp. Cleveland, OH	1,091,651	0	1,091,651	550	0	550
Consolidation Coal Co.	1,038,814	0	1,038,814	512	0	512
Harmarr Coal Co.	540,476	0	540,476	309	0	309
(Continental Oil Co.)	1,579,290		1,579,290	821		821
Penn Allegh. Coal Co., Inc. Tarentown, PA	513,708	0	513,708	165	0	165
Aloe Coal Company (Aloe Coal Co.)	0	399,671	399,671	0	75	75
Crescent Hills Coal Co., Inc. Cannonsburg, PA	135,918	0	135,918	58	0	58

PENNSYLVANIA 1976

ARMSTRONG COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	13	4,246,880	9.6	1,484	6.2
Surface	132	3,480,521	8.4	613	6.5
Total:	145	7,727,401	9.0	2,097	6.2

Production Ranking of County: 6

Projected Production Increase by 1985: 2.9 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Rochester & Pittsburgh Coal Co. (Rochester & Pittsburgh Coal Co.)	3,104,840	896,553	4,001,393	1,099	68	1,167
Carpentertown Coal & Coke Co. (Sharon Steel)	293,746	92,831	332,577	100	24	124
Canterbury Coal Company (Westrans Industries)	496,584	0	496,584	163	0	163
Leechburg Mining Co. Leechburg, PA	255,709	0	255,709	77	0	77
Ankeny, Donald K. Shelocta, PA	0	198,443	198,443	0	22	22

PENNSYLVANIA 1976

BEAVER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	82,315	0.2	121	0.5
Surface	6	105,787	0.3	29	0.3
Total:	7	188,102	0.2	150	0.5

Production Ranking of County: 22

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peggs Run Coal Co., Inc. Shippingport, PA	82,315	0	82,315	121	0	121
Kerry Coal Company Portersville, PA	0	55,676	55,676	0	9	9
Kelly Mining Company Elizabeth, PA	0	16,688	16,688	0	4	4
Vetica Construction Co. Elwood City, PA	0	16,000	16,000	0	5	5
Brush Run, Inc. New Castle, PA	0	8,956	8,956	0	2	2

PENNSYLVANIA 1976

BEDFORD COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.00	0	0.0
Surface	7	104,256	0.30	69	0.7
Total:	7	104,256	0.12	69	0.2

Production Ranking of County: 23

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
New Enterprise Stone & Lime Co. New Enterprise, PA	0	34,836	34,836	0	15	15
Low Vol Energies, Inc. Brood Top City, PA	0	31,048	31,048	0	40	40
Richards, Kenneth G. Coal Co. McConnellsburg, PA	0	23,860	23,860	0	4	4
Swistock, Inc. Houtzdale, PA	0	10,842	10,842	0	6	6
Kreiger, James Saxton, PA	0	3,670	3,670	0	2	2

PENNSYLVANIA 1976

BLAIR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.000	0	0.000
Surface	1	1,088	0.002	3	0.030
Total:	1	1.088	0.001	3	0.009

Production Ranking of County: 26

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Sheehan Coal Co. Cresson, PA	0	1,088	1,088	0	3	3

PENNSYLVANIA 1976

BRADFORD COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	50	0.0	1	0.0
Surface	0	0	0.0	0	0.0
Total:	1	50	0.0	1	0.0

Production Ranking of County: 27

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Willig, Arthur Monroeton, PA	50	0	50	1	0	1

PENNSYLVANIA 1976

BUTLER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	250,657	0.6	218	0.9
Surface	49	1,075,072	2.6	258	2.7
Total:	50	1,325,729	1.5	476	1.4

Production Ranking of County: 13

Projected Production Increase by 1985: 2.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Bethlehem Mines Corp. (Bethlehem Steel Co.)	250,657	0	250,657	218	0	218
Lucas Coal Company Newport Beach, CA	0	200,465	200,465	0	24	24
Sunbeam Coal Corp. Boyers, PA	0	129,019	129,019	0	26	26
West Freedom Mining Co. Kittanning, PA	0	98,249	98,249	0	28	28
B & D Coal Company Harrisville, PA	0	97,809	97,809	0	18	18

PENNSYLVANIA 1976

CAMBRIA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	21	5,027,225	11.3	4,211	17.5
Surface	59	2,857,108	6.9	750	7.9
Total:	80	7,884,333	9.1	4,961	14.8

Production Ranking of County: 5

Projected Production Increase by 1985: 1.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Bethlehem Mines Corp. (Bethlehem Steel Co.)	2,585,071	0	2,585,071	2,272	0	2,272
Barnes & Tucker Co. (Alco Standard Corp.)	1,717,820	0	1,717,820	1,297	0	1,297
Cooney Bros. Coal Co. Cresson, PA	0	784,130	784,130	0	94	94
Universal Minerals Davidsville, PA	0	497,916	497,916	0	58	58
Cambria Coal Company (Gulf Resources & Chemical Co.)	0	304,544	304,544	0	70	70

PENNSYLVANIA 1976

CENTRE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	602,864	1.4	231	1.00
Surface	19	612,077	1.5	154	1.60
Total:	20	1,214,941	1.4	385	1.15

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Rushton Mining Co. (Penn. Power & Light)	603,864	0	602,864	231	0	231
Johnson & Morgan Co. Snow Shoe, PA	0	123,494	123,494	0	25	25
Halfway Coal Yard, Inc. Snow Shoe, PA	0	120,000	120,000	0	22	22
Carlin Inc., R.S. Snow Shoe, PA	0	90,929	90,929	0	28	28
Elliott Coal Mining Osceola Mills, PA	0	78,727	78,727	0	24	24

PENNSYLVANIA 1976
CLARION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	00.0	0	00.0
Surface	143	5,197,011	12.5	1,068	11.2
Total:	143	5,197,011	6.0	1,068	3.2

Production Ranking of County: 8

Projected Production Increase by 1985:
0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
C&K Coal Co.	0	1,907,688	1,907,688	0	371	371
Shannon Coal Co.	0	928,351	928,351	0	185	185
Vanlage Coal Co.	0	130,789	130,789	0	48	48
(Gulf Resources & Chem. Co.)		2,966,828	2,966,828		604	604
Glacial Minerals, Inc. Clarion, PA	0	206,307	206,307	0	30	30
Zacherl Coal Co. Inc. (Clifton Corp.)	0	202,545	202,545	0	23	23
Dean Contractor, Ernest C. (Reddale Resources, Inc.)	0	192,893	192,893	0	54	54
R.E.M. Coal Co., Inc. Brookville, PA	0	166,254	166,254	0	23	23

PENNSYLVANIA 1976

CLEARFIELD COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	651,446	1.5	225	0.9
Surface	264	7,659,290	18.5	1,851	19.5
Total:	268	8,310,736	9.7	2,076	6.2

Production Ranking of County: 3

Projected Production Increase by 1985: 2.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Benjamin Coal Co. (Benjamin Coal Co.)	0	1,105,669	1,105,669	0	153	153
Hamilton Contracting Co. Woodland, PA	0	408,254	408,254	0	59	59
Empire Coal Co., Inc. La Jose, PA	0	394,052	394,052	0	85	85
Elliott Coal Mining Co. Osceola, PA	0	342,320	342,320	0	68	68
Hepburnia Coal Co. Grampian, PA	0	335,385	335,385	0	51	51

PENNSYLVANIA 1976

CLINTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	17	390,768	0.9	127	1.3
Total:	17	390,768	0.4	127	0.4

Production Ranking of County: 21

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Confer Brothers Coal Co. Milesburg, PA	0	95,182	95,182	0	18	18
River Hill Coal Co. (Oil Shale Corp.)	0	91,802	91,802	0	18	18
Carlin, Inc., R.S. Snow Shoe, PA	0	46,142	46,142	0	10	10
Cooks Run Coal Co., Inc. Wallaceton, PA	0	42,512	42,512	0	16	16
Quimm Coal & Clay Mines Emporium, PA	0	41,076	41,076	0	21	21

PENNSYLVANIA 1976

ELK COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	36	674,260	1.6	116	1.2
Total:	36	674,260	0.8	116	0.3

Production Ranking of County: 16

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
P&N Coal Co., Inc. Punxsutawney, PA	0	258,153	258,153	0	41	41
Ownes Coal Mining Co. Penfield, PA	0	136,289	136,289	0	15	15
Fairview Coal Co., Inc. Ridgeway, PA	0	46,148	46,148	0	6	6
Glen Irvan Corp. Sidman, PA	0	58,635	58,635	0	8	8
R&R Coal Company Vandergrift, PA	0	45,890	45,890	0	7	7

PENNSYLVANIA 1976

FAYETTE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	753,389	1.7	472	2.0
Surface	128	2,373,386	5.7	561	5.9
Total:	130	3,126,775	3.7	1,033	3.1

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Luzerne Coal Corp. E. Millsboro, PA	0	784,432	784,432	0	83	83
National Mines Corp. (National Steel Corp.)	514,422	0	514,422	264	0	264
U.S. Steel Corp. (U.S. Steel Corp.)	238,967	0	238,967	100	0	100
Marsolino Coal & Coke Uniontown, PA	0	199,151	199,151	0	56	56
Purco Coal Inc. Monongahela, PA	0	119,761	119,761	0	25	25

PENNSYLVANIA 1976

FULTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.00	0	0.00
Surface	2	12,500	0.03	4	0.04
Total:	2	12,500	0.01	4	0.01

Production Ranking of County: 24

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
L. & B. Coal Co. Waterfall, PA	0	12,500	12,500	0	4	4

PENNSYLVANIA 1976

GREENE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	16	6,892,325	15.5	3,888	16.1
Surface	47	1,092,546	2.6	234	2.5
Total:	63	7,984,871	9.3	4,122	12.3

Production Ranking of County: 4

Projected Production Increase by 1985: 12.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
U. S. Steel Corp. (U.S. Steel Corp.)	2,761,599	0	2,761,599	1,352	0	1,352
Gateway Coal Co. (Jones & Laughlin Steel Corp. & Wheeling-Pittsburgh Steel)	1,291,263	0	1,291,263	624	0	624
Duquesne Light Co. (Duquesne Light Co.)	1,079,199	0	1,079,199	547	0	547
Nemacolin Mines Corp. McMurray, PA	788,200	0	788,200	516	0	516
Jones & Laughlin Steel Corp. California, PA	689,336	0	689,336	514	0	514

PENNSYLVANIA 1976

HUNTINGTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.000	0	0.00
Surface	2	4,000	0.009	4	0.04
Total:	2	4,000	0.005	4	0.01

Production Ranking of County: 25

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
L. & B. Coal Co. Waterfall, PA	0	4,000	4,000	0	4	4

PENNSYLVANIA 1976

INDIANA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	33	8,138,008	18.4	4,639	19.3
Surface	133	2,664,391	6.4	608	6.4
Total:	166	10,802,399	12.6	5,247	15.6

Production Ranking of County: 2

Projected Production Increase by 1985: 2.85 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Florence Mining Co.	1,773,998	0	1,773,998	1,307	0	1,307
Helen Mining Co.	758,693	0	758,693	474	0	474
North American Coal Corp.	789,851	0	789,851	379	0	379
(North American Coal Corp.)	3,322,542		3,322,542	2,160		2,160
Greenwich Collieries Co.	1,605,085	0	1,605,085	943	0	943
Tunnelton Mining Co.	402,724	0	402,724	210	0	210
(Penn. Power & Light Co.)	2,007,809		2,007,809	1,153		1,153
Helvetia Coal Co.	1,610,370	0	1,610,370	605	0	605
Rochester & Pitts. Coal Co.	82,712	103,522	186,234	91	14	105
(Rochester & Pitts. Coal Co.)	1,693,082	103,522	1,796,604	696	14	710
Mears Coal Company	267,977	115,428	383,405	68	17	85
Doverspike Bros. Coal Co.	71,396	141,314	212,710	22	10	32
(Penn West Fuels, Inc.)	339,373	356,742	596,115	90	27	117

(Continued)

PENNSYLVANIA 1976

INDIANA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground					
Surface	____	____	____	____	____
Total:					

Production Ranking of County: ____

Projected Production Increase by 1985: ____ million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
INDIANA COUNTY (Cont'd)						
Old Home Manor, Inc.	0	372,718	372,718	0	83	83

PENNSYLVANIA 1976

JEFFERSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	5	81,088	0.2	50	0.2
Surface	95	2,406,714	5.8	516	5.4
Total:	100	2,487,802	2.9	566	1.6

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Stahlman Coal Co. Inc. (Gulf Resources & Chem. Co.)	0	470,717	470,717	0	57	57
Doverspike Bros. Coal Co. (Penn West Fuels, Inc.)	46,918	193,306	240,224	24	35	59
Benjamin Coal Co. La Jose, PA	0	235,226	235,226	0	28	28
Kann, John Punxsutawney, PA	0	204,456	204,456	0	14	14
Baughman Coal Co., Inc. Brookville, PA	0	158,773	158,773	0	45	45

PENNSYLVANIA 1976

LAWRENCE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	29	689,526	1.7	146	0.5
Total:	29	689,526	0.8	146	0.4

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ambrosia Coal & Constr. Co. Edinburgh, PA	0	283,742	283,742	0	38	38
Kerry Coal Company Portersville, PA	0	134,206	134,206	0	27	27
Veon, Inc., Ralph A. Darlington, PA	0	102,478	102,478	0	32	32
Carlson Mining New Castle, PA	0	37,399	37,399	0	16	16
Miller McKnight Coal Co., Inc. Slippery Rock, PA	0	33,243	33,342	0	3	3

PENNSYLVANIA 1976

LYCOMING COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	6	490,197	1.2	71	0.7
Total:	6	490,197	0.6	71	0.2

Production Ranking of County: 19

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Jones & Braque Mining Co. Blossburg, PA	0	284,718	284,718	0	34	34
Fisher Mining Company Williamsport, PA	0	105,172	105,172	0	22	22
Percival, Paul Canton, PA	0	100,307	100,307	0	15	15

PENNSYLVANIA 1976

MERCER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	7	399,737	0.9	46	0.5
Total:	7	399.737	0.5	46	0.1

Production Ranking of County: 20

Projected Production Increase by 1985:
0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Willowbrook Mining Co. Grove City, PA	0	165,185	165,185	0	9	9
Perry Bros. Coal Co. Sharon, PA	0	149,829	149,829	0	18	18
H & D Coal Co. Slippery Rock, PA	0	51,964	51,964	0	5	5
Chutz Coal Co.	0	24,605	24,605	0	6	6
S.& C. Pipeline Co. Greenburg, PA	0	8,154	8,154	0	8	8

PENNSYLVANIA 1976

SOMERSET COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	25	2,681,453	6.0	1,399	5.8
Surface	182	3,705,080	8.9	1,021	10.7
Total:	207	6,386,533	7.4	2,420	7.2

Production Ranking of County: 7

Projected Production Increase by 1985: 4.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
G.M. & W. Coal Co., Inc.	724,950	0	724,950	361	0	361
Delta Mining Inc.	450,454	0	450,454	130	0	130
Fetterolf Coal Co., Inc.	0	315,283	315,283	0	83	83
(Cerro Corp.)	1,175,404	315,283	1,490,687	491	83	574
Bethlehem Mines Corp. (Bethlehem Steel Co.)	383,271	0	383,271	144	0	144
Penn Pocahontas Coal Co. Garrett, PA	0	318,287	318,287	0	63	63
PBS Coals Inc. Mercersburg, PA	0	306,692	306,692	0	130	130
Consolidation Coal Co. (Continental Oil Co.)	259,179	0	259,179	176	0	176

PENNSYLVANIA 1976

TIOGA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	7	629,653	1.5	103	1.1
Total:	7	629,653	0.7	103	0.3

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Jones & Brague Mining Co. Blossburg, PA	0	477,331	477,331	0	70	70
Percival, John Canton, PA	0	87,800	87,800	0	16	16
P. & M. Coal Company Blossburg, PA	0	64,522	64,522	0	17	17

PENNSYLVANIA 1976

VENANGO COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	19	540,568	1.3	93	0.9
Total:	19	540,568	0.6	93	0.3

Production Ranking of County: 18

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Pengrove Coal Company Grove City, PA	0	159,339	159,339	0	17	17
C. & K. Coal (Gulf Resources & Chem. Co.)	0	86,216	86,216	0	16	16
Rockland Mining Company Clarion, PA	0	69,994	69,994	0	9	9
Winger Coal Co., Inc. Mercer, PA	0	43,569	43,569	0	9	9
Mineral Hill Corp. Grove City, PA	0	41,853	41,853	0	5	5

PENNSYLVANIA 1976

WASHINGTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	13	10,799,522	24.4	5,141	21.3
Surface	48	1,646,302	4.0	362	4.8
Total:	61	12,445,824	14.6	5,503	16.4

Production Ranking of County: 1

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Bethlehem Mines Corp. (Bethlehem Steel Co.)	2,912,392	0	2,912,392	1,677	1	1,677
U.S. Steel Corp. (U.S. Steel Corp.)	2,202,302	0	2,202,302	823	0	823
Mathies Coal Co.	2,027,281	0	2,027,281	606	0	606
Consolidation Coal Co.	1,774,602	0	1,774,602	750	0	750
(Continental Oil Co.)	3,801,883		3,801,883	1,356		1,356
Jones & Laughlin Steel Corp. California, PA	1,055,094	0	1,055,094	771	0	771
Republic Steel Corp. Cleveland, OH	625,048	0	625,048	321	0	321

PENNSYLVANIA 1976

WESTMORELAND COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	6	800,041	1.8	405	1.7
Surface	105	2,004,222	4.8	533	5.6
Total:	111	2,804,263	3.2	938	2.8

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Republic Steel Corp. (Republic Steel Corp.)	603,433	0	603,433	311	0	311
Eidemilles Inc., Adam Greensburg, PA	0	384,704	384,704	0	75	75
Old Horne Manor Inc. Homer City, PA	0	276,931	276,931	0	60	60
Eastern Associated Coal Corp. (Eastern Gas & Fuel Assoc.)	169,987	0	169,987	80	0	80
North Cambria Fuel Co. Spangler, PA	0	137,897	137,897	0	27	27

WEST VIRGINIA 1976

BARBOUR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	12	950,046	1.1	696	1.3
Surface	38	2,047,244	9.8	737	9.2
Total:	50	2,997,290	2.8	1,433	2.4

Production Ranking of County: 14

Projected Production Increase by 1985: 2.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Barbour Coal Company Clarksburg, WV	0	1,209,139	1,209,139	0	283	283
Badger Coal Company (The Pittston Co.)	438,819	175,536	614,355	404	58	462
Bethlehem Mines Corp. (Bethlehem Steel Co.)	347,133	0	347,133	151	0	151
King Knob Coal Co., Inc. Clarksburg, WV	0	227,596	227,596	0	212	212
C. & W. Coal Company Clarksburg, WV	53,124	78,994	132,118	14	45	59

WEST VIRGINIA LAND-MINERAL OWNERS

BARBOUR COUNTY, 1974

Owner (Parent Company)	Acres Owned
Hillman Coal & Coke Co.	43,404
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	39,301
Carbona Mining Corp.	10,812
Bethlehem Steel Corp.	9,656
Curtis T. Lambert	9,546
Anna Murphy	7,969
Lucille Chesser	7,057
Consolidation Coal Co. (Continental Oil Co.)	6,917
Frank G. Kittle Heirs	6,874
C.C. Cornelius Trust	6,592
Pittston Co.	6,136
Chessie System	1,694
Total:	155,958
Total Acres in County:	221,062

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

BOONE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	56	8,263,056	9.4	5,053	9.8
Surface	24	2,204,986	10.5	676	8.4
Total:	80	10,468,042	9.6	5,729	9.6

Production Ranking of County: 2

Projected Production Increase by 1985: 7.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Eastern Assoc. Coal Corp. (Eastern Gas & Fuel Assoc.)	2,124,973	0	2,124,973	1,691	0	1,691
Armco Steel Corp. (Armco Steel)	1,035,172	0	1,035,172	376	0	376
Westmoreland Coal Co. (Westmoreland Coal Co.-Penn Virginia Corp.)	981,144	0	981,144	795	0	795
Southern Appalachian Coal Co. Cedar Coal Company (American Elec. Power Serv. Corp.)	431,601 349,071 780,672	465,124 282,894 748,018	896,725 631,965 1,528,690	323 135 458	123 119 242	446 254 700
Kanawha Coal Company Ashford, WV	541,370	0	541,370	294	0	294

WEST VIRGINIA LAND-MINERAL OWNERS, BOONE COUNTY, 1974

Owner (Parent Company)	Acres Owned
Bethlehem Steel Corporation	29,383
Federal Coal Company	28,738
Charleston National Bank	27,788
Southern Land Company	24,317
Prichard-Hotley Estate	18,061
Appalachian Power Company (America Electric Power)	15,992
T. Yawkey	13,372
Shonk Land Company	12,401
Chessie System	11,401
Armco Steel Corporation	11,211
Westmoreland Coal Company	10,987
Oglebey-Norton Company	10,640
Ashland Oil	9,198
Cabot Corporation	8,965
Cole and Crane Trust	8,823
Horse Creek Land and Mining Company	8,588
Tasa Coal Company	8,559
Berwind Corporation	8,202
N & W Railroad	7,400
Little Coal Land Company	6,471
Winifred Company	6,000
Rock Creek Collieries	4,684
Mohler Lumber Company	3,425
Total:	294,612
Total Acres in County:	323,840

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

BOONE COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Federal Coal Company	26,655	788	1,358	28,801
Charleston National Bank	23,230	683	2,102	26,015
Southern Land Co., Dickinson Properties, Inc.	21,997	1,678	932	24,607
Bethlehem Steel Corp.	7,467	1,821	2,999	12,287
Penn-Virginia Corp. (Westmoreland Coal Co.)	7,728	379	2,899	20,996
Cole, Lindsay & Woods Trustees	7,539	390	708	8,637
Western Pocahontas Corp. (C&O, B&O Railroads)	8,292	107	103	8,502
Berwind Corp.	7,432	100	677	8,209
Pocahontas Land Corp. (Norfolk & Western Railroad)	7,278	--	123	7,401
Dingess-Rum Coal Co.	2,100	54	2,542	4,696
Totals:	119,718	6,030	14,443	140,151

Total Acres in County: 324,480

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

BRAXTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	29,132	0.03	27	0.05
Surface	7	148,303	0.70	87	1.90
Total:	11	177,435	0.16	114	0.19

Production Ranking of County: 29

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Crafton Coal Company Clarksburg, WV	0	58,765	58,765	0	22	22
Copen Coal Company Burnsville, WV	13,757	27,295	41,052	4	15	19
Bridgeport Mining Co. Jane Lew, WV	0	19,962	19,962	0	19	19
Boggs, Harry C. Spencer, WV	0	16,948	16,948	0	6	6
B & J Coal Company Craigsville, WV	8,717	0	8,717	6	0	6

WEST VIRGINIA 1976

BROOKE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	748,228	0.9	344	0.7
Surface	5	126,938	0.6	31	0.4
Total:	7	875,166	0.8	375	0.6

Production Ranking of County: 29

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Windsor Power House Coal Co. (American Elec. Power Serv. Corp.)	731,745	0	731,745	325	0	325
Starvaggi Industries, Inc. Weirton, WV	0	51,916	51,916	0	6	6
I.S.C., Inc. Pittsburgh, PA	0	32,578	32,578	0	12	12
Bologna Mining Company Burgettstown, PA	0	27,197	27,197	0	7	7
Hilltop Mining Co., Inc. Wellsburgh, WV	16,483	0	16,483	19	0	19

WEST VIRGINIA LAND-MINERAL OWNERS

BROOKE COUNTY, 1974

Owner (Parent Company)	Acres Owned
Stanvaggi Industries, Inc.	10,643
Wheeling-Pittsburg Steel Corp.	9,191
Wheeling Dollar Savings & Trust Co.	9,008
Wheeling Steel Corp.	5,328
American Electric Power Co.	4,514
National Steel Corp.	4,117
Consolidation Coal Co. (Continental Oil Co.)	2,954
Total:	47,755
Total Acres in County:	59,200

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

CLAY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	6	40,497	0.04	29	0.06
Surface	2	22,234	0.10	5	0.06
Total:	8	62,731	0.05	34	0.06

Production Ranking of County: 31

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION Underground	PRODUCTION Surface	PRODUCTION Total	EMPLOYMENT Underground	EMPLOYMENT Surface	EMPLOYMENT Total
Five Block Coal Co. Clay, WV	33,910	0	33,190	18	0	18
Mountaineer Fuels, Inc. Clay, WV	0	19,776	19,776	0	2	2
Broad Run Mining Corp. Charleston, WV	2,582	0	2,582	7	0	7
Domestic Fuels, Inc. Clay, WV	2,463	0	2,463	3	0	3
Module Homes Service Cottle, WV	0	2,458	2,458	0	3	3

WEST VIRGINIA LAND-MINERAL OWNERS

CLAY COUNTY, 1974

Owner (Parent Company)	Acres Owned
Pittston Co.	57,611
Marion Swsarto	12,171
T. Isalinger & F. Isalinger	10,786
Chessie System	7,083
Porters Creek Coal & Coke Co.	4,690
Carbon Chemical Co.	4,587
Bethlehem Steel Corp.	4,345
Southern Land Co.	2,138
Total:	103,411
Total Acres in County:	221,702

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

DODDRIDGE COUNTY, 1974

Owner (Parent Company)	Acres Owned
Virginia Tetrick	52,463
N.M. Welch	19,550
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	13,611
Flint Creek Fuel Co.	6,729
Pennzoil Co.	1,914
Total:	94,267
Total Acres in County:	205,830

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

FAYETTE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	40	2,259,810	2.6	1,649	3.2
Surface	30	927,114	4.4	502	6.3
Total:	70	3,186,924	2.9	2,151	3.6

Production Ranking of County: 13

Projected Production Increase by 1985: 1.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Allied Chemical Co. (Semet Solvary Div.)	502,994	179,977	682,971	441	43	454
Riverton Coal Company Oak Hill, WV	284,040	3,268	287,308	134	14	148
Carbon Fuel Company (ITT)	223,630	0	223,630	138	0	138
Royal Coal Company (Nat'l Bulk Carriers)	216,561	0	216,561	186	0	186
The New River Company (Chessie System)	202,404	0	202,404	148	0	148

WEST VIRGINIA LAND-MINERAL OWNERS

FAYETTE COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	44,064
John Nuttall Estate	35,951
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	34,544
Berwind Corp.	27,115
N & W Railroad	22,693
Georgia-Pacific Corp.	11,833
Westvaco Corp.	11,211
Imperial Colliery	10,663
Kanawha Gauley Coal and Coke	10,352
Westmoreland Coal Co.	9,555
J.L. Buery Estate	8,700
Union Carbide	8,500
Allied Chemical Co.	7,422
American Electric Power Co.	4,025
Charleston National Bank	3,623
The Pittston Co.	780
Total:	251,031
Total Acres in County:	426,560

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975).

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WEST VIRGINIA LAND-MINERAL OWNERS

FAYETTE COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Western Pocahontas Corp. (C&O, B&O Railroads)	27,806	2,798	29,296	59,900
Berwind Corp.	11,562	2	15,399	26,963
Pocahontas Land Corp. (Norfolk & Western Railroad)	22,205	1,296	2,161	25,662
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	21,769	308	1,728	23,805
Penn-Virginia Corp. (Westmoreland Coal Co.)	9,840	2,813	4,324	16,977
Union Carbide Corp.	7,663	183	938	8,784
Charleston National Bank	--	--	3,713	3,713
Totals:	100,845	7,400	57,559	165,804
Total Acres in County: 426,880				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

GILMER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	28,289	0.03	26	0.05
Surface	1	16,381	0.08	12	0.15
Total:	4	44,670	0.04	38	0.06

Production Ranking of County: 33

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Orlando Coals, Inc. Spencer, WV	19,785	16,381	36,166	22	12	34
K Coal Company Glenville, WV	8,504	0	8,504	4	0	4

WEST VIRGINIA LAND-MINERAL OWNERS

GILMER COUNTY, 1974

Owner (Parent Company)	Acres Owned
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	22,986
Gertrude B. Howell	21,100
Bennett Estate	20,000
William J. Sherard Estate	9,246
Chessie System	8,755
C.S. Despard Trust (Parkersburg National Bank)	5,586
Pennzoil Co.	5,584
Burke Smith Trust (Union National Bank)	5,400
Daisy I. Dennison Trust	5,400
Wood County Real Estate Co.	5,004
Burnuss Land & Lumber Co.	3,292
Total:	111,356
Total Acres in County:	219,136

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

GRANT COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	1,299,251	1.5	780	1.5
Surface	9	301,636	1.5	62	0.8
Total:	13	1,600,887	1.5	842	1.4

Production Ranking of County: 16

Projected Production Increase by 1985: 2.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Island Creek Coal Co. (Occidental Petroleum)	920,924	0	920,924	536	0	536
Laurel Run Mining Co. Mt. Storm, WV	378,327	0	378,327	244	0	244
Allegheny Mining Corp. Mt. Storm, WV	0	301,456	301,456	0	62	62
Buffalo Coal Company Bayard, WV	0	17,199	17,199	0	9	9

WEST VIRGINIA 1976

GREENBRIAR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	15	504,707	0.6	241	0.5
Surface	23	524,730	2.5	490	6.1
Total:	38	1,209,437	1.1	731	1.2

Production Ranking of County: 20

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Leckie Smokeless Coal Co. (Internat'l Carbon & Minerals)	260,531	166,811	427,342	117	69	186
Sewell Coal Company (The Pittston Co.)	0	162,451	162,451	0	133	133
John B. Harris, Inc. Lewisburg, WV	81,805	43,040	124,835	9	16	25
Bonanza Coal Company Lexington, KY	76,082	0	76,082	31	0	31

WEST VIRGINIA LAND-MINERAL OWNERS

GREENBRIER COUNTY, 1974

Owner (Parent Company)	Acres Owned
Westvaco Corp.	93,922
Georgia-Pacific Corp.	66,628
Savoy Industries, Inc.	22,427
Leckie Smokeless Coal Co. (International Carbon & Minerals Co.)	15,579
J.M. Huber Corp.	8,882
Cherry River Coal & Coke Co.	7,683
Chessie System	5,616
Sarah L. Holland	3,442
Graham Smokeless Coal Corp.	3,159
Clear Creek Fuel Co.	2,944
Total:	228,382
Total Acres in County:	554,592

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

HARRISON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	26	3,950,524	4.5	1,105	2.1
Surface	42	1,210,939	5.8	561	7.0
Total:	68	5,161,463	4.7	1,666	2.8

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	3,378,337	0	3,378,337	857	0	857
King Knob Coal Co., Inc. Clarksburg, WV	0	344,596	344,596	0	76	76
K-W-D Construction Co. Clarksburg, WV	32,192	133,327	165,519	36	38	74
Pettito Bros., Inc. Clarksburg, WV	0	113,359	113,359	0	7	7
Nada Coal Company Bridgeport, WV	56,142	44,956	101,098	50	19	69

WEST VIRGINIA LAND-MINERAL OWNERS

HARRISON COUNTY, 1974

Owner (Parent Company)	Acres Owned
Consolidation Coal Co. (Continental Oil Co.)	59,351
Virginia Tetrick	
The Pittston Co.	36,959
Willis G. Tetrick, Jr.	19,597
Owings Development Co.	13,947
Union National Bank (Trustee)	10,678
Pennzoil Co.	16,195
Wayne Coal Co.	5,352
Pettito Brothers, Inc.	3,299
Bethlehem Fairmont Coal Co.	3,157
Bethlehem Steel Corp.	2,039
Union Carbide Corp.	893
Total:	93
Total Acres in County:	170,574
	266,880

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

HARRISON COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Virginia A. & Willis G. Tetrick, Jr. (Family Trust Holding)	262	--	49,995	50,257
Consolidation Coal Co. (Continental Oil Co.)	--	4,076	37,379	41,455
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	--	--	8,109	8,109
Pittston Corp.	1,673	224	3,638	5,535
Union Carbide Corp.	107	--	216	323
Bethlehem Steel Corp.	--	--	251	251
Totals:	2,042	4,300	99,588	105,930
Total Acres in County: 267,520				

Source: J. Davitt McAteer, *Coal Mine Health and Safety: The Case of West Virginia* (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

KANAWHA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	51	5,412,582	6.2	3,378	6.5
Surface	36	2,272,320	10.8	554	6.9
Total:	87	7,684,902	7.1	3,932	6.6

Production Ranking of County: 6

Projected Production Increase by 1985: 4.15 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Valley Camp Coal Co. (Quaker State Oil Ref. Corp.)	1,334,938	121,800	1,456,738	360	31	391
Carbon Fuel Company (ITT)	881,139	205,206	1,086,165	1,017	88	1,105
Cannelton Industries, Inc. (Algoma Steel Corp./Canadian-Pacific Investments Ltd.)	570,736	506,616	1,077,352	390	42	432
Union Carbide Corp. (Union Carbide)	749,782	0	749,782	300	0	300
Cedar Coal Company (Amer. Elec. Power Serv. Corp.)	320,291	383,583	703,874	186	103	289

WEST VIRGINIA LAND-MINERAL OWNERS

KANAWHA COUNTY, 1974

Owner (Parent Company)	Acres Owned
Union Carbide Corp.	50,447
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	22,767
Dickinson Properties & Dickinson Fuel	20,530
Valley Camp Coal Co.	17,095
Shonk Land Co.	12,181
Bedford Land Co.	11,894
Total:	134,944
Total Acres in County:	584,563

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

KANAWHA COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Union Carbide Corp.	31,337	6,900	17,270	48,982
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	22,330	--	788	23,118
Totals:	53,667	6,900	18,058	72,100
Total Acres in County: 584,320				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

LEWIS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	41,493	0.1	8	0.02
Surface	17	340,759	1.6	158	2.00
Total:	19	382,252	0.4	166	0.30

Production Ranking of County: 25

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Grafton Coal Company Clarksburg, WV	0	206,460	206,460	0	88	88
Petitto Bros., Inc. Clarksburg, WV	0	57,980	57,980	0	9	9
Continental Coal Corp. Buckhannon, WV	41,193	0	41,193	8	0	8
The Lehigh Corp. Bridgeport, WV	0	24,280	24,280	0	11	11
Bridgeport Mining Co. Jane Lew, WV	0	23,220	23,220	0	13	13

WEST VIRGINIA 1976

LINCOLN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	172,414	0.2	91	0.2
Surface	0	0	0.0	0	0.0
Total:	4	172,414	0.2	91	0.2

Production Ranking of County: 30

Projected Production Increase by 1985: .32 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Southern Appalachian Coal Co. (Amer. Elec. Power Serv. Corp.)	150,156	0	150,156	71	0	71
Grassy Creek Coal Co. Chapmanville, WV	22,258	0	22,258	20	0	20

WEST VIRGINIA LAND-MINERAL OWNERS

LINCOLN COUNTY, 1974

Owner (Parent Company)	Acres Owned
Columbia Gas System	270,120
Armco Steel Corp.	13,061
Horse Creek Land & Mining Co.	12,239
Sweetland Land Co.	12,943
Southeastern Gas Co.	7,072
Courtney Corp.	6,137
Big Ugly Coal Corp.	3,194
Mohler Lumber Co.	3,184
Ashland Oil Co.	1,359
Bethlehem Steel Corp.	1,148
Total:	330,457
Total Acres in County:	279,704

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

LOGAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	100	7,113,887	7.0	4,567	8.8
Surface	12	1,498,266	7.1	475	5.9
Total:	112	8,612,153	7.9	5,042	8.4

Production Ranking of County: 5

Projected Production Increase by 1985: 2.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Amherst Coal Company Charleston, WV	1,345,888	293,860	1,639,748	1,053	89	1,142
Island Creek Coal Co. (Occidental Petroleum Corp.)	945,529	214,296	1,159,825	638	78	716
Buffalo Mining Company	542,111	298,811	840,922	297	128	425
Elkay Mining Company	524,727	158,490	683,217	201	58	259
(The Pittston Co.)	1,066,838	457,301	1,524,139	498	186	684
Zapata Coal Corp. (Penn-West Fuels, Inc.)	439,836	59,833	499,669	238	21	259
Chafin Coal Co., Inc. Logan, WV	474,202	0	474,202	178	0	178

WEST VIRGINIA LAND-MINERAL OWNERS

LOGAN COUNTY, 1974

Owner (Parent Company)	Acres Owned
Bethlehem Steel Corp.	36,359
Island Creek Coal Co. (Occidental Petroleum Co.)	32,381
Georgia-Pacific Corp.	30,778
Dingess Rum Coal Co.	30,742
Cole & Crane Trust	25,837
Kelly Hatfield Land Co.	22,076
W.W. McDonald Land Co.	14,348
Pardee Land Co.	12,685
Amherst Coal Co.	11,388
Chessie System	3,810
Total:	220,494
Total Acres in County:	291,725

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

LOGAN COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Bethlehem Mines Corp. (Bethlehem Steel Corp.)	22,919	1,984	13,279	38,182
Island Creek Coal Co. (Occidental Petroleum Corp.)	918	--	30,666	31,584
Dingess-Rum Coal Co.	27,752	784	2,649	31,186
Georgia-Pacific Corp.	30,283	--	--	30,283
Cole, Lindsay, and Woods Trustees	27,040	347	1,008	28,395
Western Pocahontas Corp. (B&O, C&O Railroads)	3,812	--	--	3,812
U.S. Steel Corp.	3,399	--	136	3,535
Penn-Virginia Corp. (Westmoreland Coal Co.)	2,108	--	--	2,108
Pocahontas Land Corp. (Norfolk & Western Railroad)	391	--	379	770
Totals:	118,622	3,115	48,117	169,855

Total Acres in County: 291,840

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WEST VIRGINIA 1976

McDOWELL COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	154	9,516,678	10.8	6,979	13.5
Surface	20	946,466	4.5	346	4.3
Total:	174	10,463,144	9.6	7,324	12.3

Production Ranking of County: 3

Projected Production Increase by 1985: 1.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
U.S. Steel Corp. (U.S. Steel Corp.)	2,403,681	11,312	2,414,993	1,331	719	1,350
Consolidation Coal Co.	1,479,625	232,255	1,711,880	1,026	37	1,063
Bishop Coal Company	1,024,843	0	1,024,843	760	0	760
(Continental Oil Co.)	2,504,468	232,255	2,736,723	1,786	37	1,823
Olga Coal Company (Lykes Resources, Inc.)	1,020,675	0	1,020,675	657	0	657
Eastern Assoc. Coal Corp. (Eastern Gas & Fuel Assoc.)	645,535	239,095	884,630	586	40	626
Trace Fork Coal Company (St. Joe Minerals, Inc.)	425,378	0	425,378	165	0	165

WEST VIRGINIA LAND-MINERAL OWNERS
McDOWELL COUNTY, 1974

Owner (Parent Company)	Acres Owned
N & W Railway Co.	110,887
Georgia-Pacific Corp.	37,285
Youngstown Mine Corp. (Youngstown Sheet & Tube Co.)	33,656
Berwind Land Co.	31,103
Consolidation Coal Co. (Continental Oil Co.)	30,816
Allied Chemical Corp.	3,190
Total:	246,943
Total Acres in County:	344,576

Source: Tom D. Miller, *Who Owns West Virginia?* (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

McDOWELL COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Pocahontas Land Corp. (Norfolk & Western Railroad)	7,101	100,614	11,484	119,585
Youngstown Mine Corp. (Youngstown Sheet and Tube Co.)	30,624	80	3,118	33,822
Berwind Corp.	28,647	52	2,863	31,562
Consolidation Coal Co. (Continental Oil Co.)	16,842	7,202	7,684	24,916
Georgia-Pacific Corp.	1,954	14,616	--	16,570
Island Creek Coal Co. (Occidental Petroleum Corp.)	1,037	--	11,733	12,770
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	--	112	--	112
Totals:	86,250	122,676	137,882	239,337
Total Acres in County: 341,230				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

MARION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	9	5,615,695	6.4	2,846	5.5
Surface	5	86,156	0.4	21	0.3
Total:	14	5,701,851	5.2	2,867	4.8

Production Ranking of County: 8

Projected Production Increase by 1985: 2.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	1,989,929	0	3,271,203	1,180	0	1,180
Eastern Assoc. Coal Corp. (Eastern Gas & Fuel Assoc.)	1,260,861	0	1,260,961	897	0	897
Southern Ohio Coal Co. (Amer. Elec. Power Serv. Corp.)	779,676	0	779,676	516	0	516
Bethlehem Mines Corp. (Bethlehem Steel Corp.)	302,455	0	302,455	253	0	253

WEST VIRGINIA LAND-MINERAL OWNERS

MARION COUNTY, 1974

Owner (Parent Company)	Acres Owned
Consolidation Coal Co. (Continental Oil Co.)	124,503
Bethlehem Steel Corp.	16,406
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	11,758
Hillman Coal & Coke Co.	9,970
Wheeling Dollar Savings & Trust	8,543
Virginia Tetrick	1,334
Total:	172,514
Total Acres in County:	200,672

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS
MARION COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Consolidation Coal Co. (Continental Oil Co.)	1	2,569	67,861	67,862
Charleston National Bank	--	1,800	41,656	43,456
Bethlehem Mines Corp. (Bethlehem Steel Corp.)	455	246	17,059	17,760
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	55	1,265	13,307	14,627
Baltimore & Ohio Railroad Co. (C&O Railroad)	--	--	5,364	5,364
Wheeling Dollar Savings & Trust Co.	--	487	4,624	5,111
Totals:	511	6,367	149,871	154,180
Total Acres in County: 200,960				

Source: J. Davitt McAteer, Coal Mine Health and Saftey: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

MARSHALL COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	5,131,175	5.8	2,362	4.6
Surface	0	0	0.0	0	0.0
Total:	4	5,131,175	4.7	2,362	4.0

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	4,697,089	0	4,697,089	2,050	0	2,050
The Valley Camp Coal Co. (Quaker State Oil Ref. Corp.)	434,086	0	434,086	312	0	312

WEST VIRGINIA LAND-MINERAL OWNERS

MARSHALL COUNTY, 1974

Owner (Parent Company)	Acres Owned
Consolidation Coal Co. (Continental Oil Co.)	129,354
Hillman Coal & Coke Co.	13,758
PPG Industries, Inc.	8,423
American Electric Power Co.	8,381
Ohio Edison Co.	8,381
Valley Camp Coal Co.	2,117
Total:	169,580
Total Acres in County:	201,766

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

MASON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	45,550	0.10	49	0.1
Surface	0	0	0.00	0	0.0
Total:	3	45,550	0.04	49	0.1

Production Ranking of County: 32

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Ohio Valley Coals, Inc. Gallipolis, OH	24,645	0	24,645	23	0	23
Gallia Coal, Inc. Gallipolis, OH	20,905	0	20,905	26	0	26
Central Coal Company New Haven, WV	0	0	0	0	0	0

WEST VIRGINIA 1976

MERCER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	8	784,804	0.9	567	1.1
Surface	4	20,717	0.1	16	0.2
Total:	12	805,521	0.7	583	1.0

Production Ranking of County: 22

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. Pocahontas Fuel Co. (Continental Oil Co.)	695,490 41,128 736,618	0 0	695,490 41,128 736,618	502 36 538	0 0	502 36 538
McKenzie Mining Co. Flat Top, WV	24,019	0	24,019	14	0	14
Hunsaker Coal Co. Rock, WV	19,752	0	19,752	7	0	7
Hawley Coal Mining Corp. New York, NY	0	16,920	16,920	0	6	6
Kitchekan Fuel Corp. (Hainley Fuel Corp.)	0	2,905	2,905	0	4	4

WEST VIRGINIA LAND-MINERAL OWNERS

MERCER COUNTY, 1974

Owner (Parent Company)	Acres Owned
N & W Railway Co.	63,328
Arlen Property Investors	7,017
Hawley Coal Mining Corp.	4,564
The McCreery Coal Land Co.	2,591
J.H. Lilly Land Co.	1,532
Total:	79,032
Total Acres in County:	271,302

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975).
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WEST VIRGINIA LAND-MINERAL OWNERS

MERCER COUNTY, 1968

Owner (Parent Company	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Pocahontas Land Corp. (Norfolk & Western Railroad)	7	25,924	37,570	37,577
Consolidation Coal Co. (Continental Oil Co.)	214	3	--	217
Totals:	221	25,927	37,570	37,794
Total Acres in County: 271,360				

Source: J. Davitt McAteer, *Coal Mine Health and Safety: The Case of West Virginia* (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

MINERAL COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	16	358,638	1.7	99	1.2
Total:	16	358,638	0.3	99	0.2

Production Ranking of County: 27

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
D. & L. Coal Co., Inc. Keeper, WV	0	117,831	117,831	0	40	40
Allegheny Mining Corp. Mt. Storm, WV	0	114,066	114,066	0	29	29
Masteller Coal Co. Keyser, WV	0	58,331	58,331	0	14	14
Wood Products, Inc. Oakland, MD	0	45,143	45,143	0	9	9
Rostosky Mining Co. Mt. Lake Park, MD	0	12,554	12,554	0	3	3

WEST VIRGINIA 1976

MINGO COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	64	3,796,526	4.3	1,916	3.7
Surface	12	638,147	3.0	379	4.7
Total:	76	4,434,673	4.1	2,295	3.8

Production Ranking of County: 12

Projected Production Increase by 1985: 7.9 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
U.S. Steel Corp. (U.S. Steel Corp.)	596,388	0	596,388	192	0	192
Jumacris Mining, Inc. Gilbert, WV	542,945	0	542,945	94	0	94
Energy Development Corp. (Ruhr-American Coal Corp.)	149,150	331,097	480,247	110	145	255
Kermit Coal Co., Inc. Kermit, WV	473,956	0	473,956	176	0	176
National Coal Mining Co. (Occidental Petroleum Corp.)	349,396	0	349,396	394	0	394

WEST VIRGINIA LAND-MINERAL OWNERS

MINGO COUNTY, 1974

Owner (Parent Company)	Acres Owned
Georgia-Pacific Corp.	56,486
Island Creek Coal Co. (Occidental Petroleum Co.)	45,521
Cotiga Development Co.	39,045
U.S. Steel Corp.	36,270
Total:	177,322
Total Acres in County:	271,040

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

MINGO COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Georgia-Pacific Corp.	7,499	38,373	3,178	49,050
Cotiga Development Co.	26,509	7,954	16,349	48,919
Island Creed Coal Co. (Occidental Petroleum Corp.)	1	3	46,648	46,652
U.S. Steel Corp.	27,287	2,432	9,526	36,905
Cole, Lindsay, & Woods Trustees	5,334	231	597	6,162
Western Pocahontas Corp. (B&O, C&O Railroads)	3,209	--	--	3,209
Totals:	69,839	48,993	76,298	190,879
Total Acres in County: 271,360				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

MONONGALIA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	25	9,649,969	11.0	3,221	6.2
Surface	14	925,283	4.4	195	2.4
Total:	39	10,575,252	9.7	3,416	5.7

Production Ranking of County: 1

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	8,025,239	0	8,025,239	2,344	0	2,344
Eastern Assoc. Coal Corp. (Eastern Gas & Fuel Assoc.)	1,030,406	0	1,030,406	660	0	660
King Knob Coal Co., Inc. Clarksburg, WV	0	529,247	529,247	0	111	111
J & J Mining Company Morgantown, WV	168,989	0	168,989	43	0	43

WEST VIRGINIA LAND-MINERAL OWNERS
MONONGALIA COUNTY, 1974

Owner (Parent Company)	Acres Owned
Consolidation Coal Co. (Continental Oil Co.)	137,152
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	27,671
Wheeling Dollar Savings & Trust (Trustee)	12,167
Charleston National Bank (Trustee)	3,193
Total:	180,183
Total Acres in County:	236,044

Source: Tom D. Miller, *Who Owns West Virginia?* (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

MONONGALIA COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber*	Total
Consolidation Coal Co. (Continental Oil Co.)	122	10,278	124,931	101,363
Wheeling Dollar Savings & Trust Co.	--	2,320	31,753	32,105
Charleston National Bank	--	1,476	7,314	8,742
Totals:	122	14,074	163,998	142,210
Total Acres in County: 236,160				

*Coal is assessed by seam in Monongalia County, and seams often overlap. This means that the mineral-timber acreage for Consolidation Coal Company is actually larger than the land area on the ground. (McAteer's note.)

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

NICHOLAS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	57	3,964,981	4.5	2,572	5.00
Surface	32	1,265,688	6.0	441	5.50
Total:	89	5,230,669	4.8	3,013	5.04

Production Ranking of County: 9

Projected Production Increase by 1985: 1.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Sewell Coal Company (The Pittman Co.)	1,206,173	0	1,206,173	838	0	838
Island Creek Coal Co. (Occidental Petroleum Co.)	994,202	0	994,202	757	0	757
Cherry River Coal & Coke Co. Richwood, WV	0	696,069	696,069	0	139	139
Westmoreland Coal Co. (Westmoreland Coal Co./ Penn. Virginia Corp.)	484,117	10,094	494,166	364	20	384
Peerless Eagle Coal Co. (St. Joe Minerals, Inc.)	370,650	0	370,650	175	0	175

WEST VIRGINIA LAND-MINERAL OWNERS

NICHOLAS COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	60,905
Westvaco Corp.	60,392
Pittston Co.	22,000
Bethlehem Steel Corp.	16,700
Tioga Lumber Co.	16,594
Georgia-Pacific Corp.	13,972
Black-Mist Fuel Corp.	12,610
Cherry River Coal & Coke Co.	10,500
Flynn Coal & Lumber Co.	10,500
Clearfield Bituminous Coal Corp.	10,200
Federal Coal Corp.	9,015
Amherst Coal Corp.	3,692
Total:	247,980
Total Acres in County:	362,092

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

NICHOLAS COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Gauley Coal Land Co.	32,166	150	19,524	51,840
C&O Railroad Co./New Gauley Coal Co. & Western Pocahontas Corp.	24,476	1,323	10,850	36,603
Pittston Co.	20,782	715	636	22,133
Bethlehem Steel Corp.	15,915	185	188	16,100
Island Creed Coal Co./Maust Coal & Coke (Occidental Petroleum Corp.)	11,050	335	1,011	12,396
Federal Coal Co.	8,696	48	260	9,024
Southern Land Co. (Dickinson Properties, Inc.)	5,708	36	--	5,743
Georgia-Pacific Corp.	451	173	3,691	4,315
Willis G. and Virginia Tetrick (Family Trust Holdings)	--	--	3,265	3,265
Dingess-Rum Coal Co.	1,243	2	8	1,253
Totals:	120,487	2,967	39,408	165,672
Total Acres in County: 420,480				

Source: J. Davitt McAteer, *Coal Mine Health and Safety: The Case of West Virginia* (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA 1976

OHIO COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	1,501,590	1.7	939	1.8
Surface	0	0	0.0	0	0.0
Total:	2	1,501,590	1.4	939	1.6

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Valley Camp Coal Co. (Quaker State Oil Refining Corp.)	1,501,590	0	1,501,590	939	0	939

WEST VIRGINIA LAND-MINERAL OWNERS

OHIO COUNTY, 1974

Owner (Parent Company)	Acres Owned
Valley Camp Coal Co.	45,126
Total:	45,126
Total Acres in County:	69,760

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

PLEASANTS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	778	0.0	1	0.002
Surface	0	0	0.0	0	0.000
Total:	1	778	0.0	1	0.002

Production Ranking of County: 35

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Globe Natural Gas Co. Manetta, OH	778	0	778	1	0	1

WEST VIRGINIA 1976

PRESTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	16	971,007	1.1	309	0.6
Surface	50	1,508,943	7.2	440	5.5
Total:	66	2,479,950	2.3	749	1.3

Production Ranking of County: 15

Projected Production Increase by 1985: 0.9 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Reliable Coal Corp. (Brook Coal Co.)	291,599	0	291,599	129	0	129
Daugherty Coal Co., Inc. Terra Alta, WV	0	228,038	228,038	0	48	48
Preston Energy, Inc. Kingwood, WV	183,155	0	183,155	46	0	46
Garbart Coal Company Kingwood, WV	0	176,887	176,887	0	19	19
Lewis Coal & Coke Co. Kingwood, WV	0	163,212	163,212	0	67	67

WEST VIRGINIA LAND-MINERAL OWNERS

PRESTON COUNTY, 1974

Owner (Parent Company)	Acres Owned
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	28,390
Kingwood Mining Corp.	27,566
Jenkins Coal & Land Co.	22,019
Preston County Coal & Coke Co.	9,220
Sandy Creek Fuel Corp.	8,546
Interstate Lumber Co.	6,910
Ocean Coal Co.	4,966
Alyeska, Inc.	4,350
Total:	111,967
Total Acres in County:	418,483

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

PRESTON COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	2,055	--	29,654	31,709
Consolidation Coal Co. (Continental Oil Co.)	--	--	1,114	1,114
Totals:	2,055	--	30,768	32,823
Total Acres in County: 418,560				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA LAND-MINERAL OWNERS

RALEIGH COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Western Pocahontas Corp. (C&O, B&O Railroads)	44,186	2,690	31,379	78,255
The Powland Land Co.	45,711	309	5,828	51,848
Beaver Coal Corp.	35,598	818	15,248	51,664
Pocahontas Land Corp. (Norfolk & Western Railroad)	66	8,386	18,082	18,987
Winding Gulf Coals, Inc. (Penn-Virginia/Westmoreland Coal)	3,084	1,303	1,424	5,811
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	655	736	794	2,185
Georgia-Pacific Corp.	--	2,043	--	2,043
Union Carbide Corp.	420	36	36	490
Consolidation Coal Co. (Continental Oil Co.)	50	--	22	72
Totals:	129,770	16,321	72,811	211,265
Total Acres in County: 390,400				

Source: J. Davitt McAteer, *Coal Mine Health and Safety: The Case of West Virginia* (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

WEST VIRGINIA LAND-MINERAL OWNERS

POCAHONTAS COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	53,623
Savoy Industries, Inc.	56,430
Mower Lumber Co.	53,449
Georgia-Pacific Corp.	9,000
Island Creek Coal Co. (Occidental Petroleum Corp.)	4,230
Total:	176,732
Total Acres in County:	323,287

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

PUTNAM COUNTY, 1974

Owner (Parent Company)	Acres Owned
Cabot Corp.	60,517
J.L. McLean Heirs	14,563
Union Carbide Corp.	14,168
Amherst Coal Co.	13,901
Frank A. Hardy	13,039
Total:	116,188
Total Acres in County:	224,364

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

RALEIGH COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	59	5,730,110	6.5	4,662	9.0
Surface	27	1,097,708	5.2	633	7.9
Total:	86	6,827,818	6.3	5,295	8.9

Production Ranking of County: 7

Projected Production Increase by 1985: 10.8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Westmoreland Coal Co. (Westmoreland Coal Co./ Penn-Virginia Corp.)	1,256,769	0	1,256,769	1,152	0	1,152
Consolidation Coal Co. (Continental Oil Co.)	561,137	274,477	835,614	317	122	439
Beckley Coal Mining Co. Glen Daniel, WV	736,603	0	736,603	412	0	412
Armco Steel Corp. (Armco Steel Corp.)	731,928	0	731,928	371	0	371
Sterling Smokeless Coal Co. Whitby, WV	141,808	321,943	463,751	153	186	339

WEST VIRGINIA LAND-MINERAL OWNERS

RALEIGH COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	79,215
Rowland Land Co.	54,180
Westmoreland Coal Co./Penn Virginia Corp.	48,091
N & W Railway Co.	26,304
Piney Coking Coal & Land Co.	24,143
Southern Land Co.	16,080
Wilcox Industries, Inc.	10,162
McCreery Coal Land Co.	7,460
Allied Chemical Corp.	2,808
Consolidation Coal Co. (Continental Oil Co.)	2,138
Berwind Corp.	1,398
Total:	271,977
Total Acres in County:	390,496

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

RANDOLPH COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	25	404,388	0.5	297	0.6
Surface	12	672,705	3.2	217	2.7
Total:	37	1,077,093	1.0	514	0.9

Production Ranking of County: 19

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Larosa Fuel Co., Inc. Clarksburg, WV	0	388,016	388,016	0	82	82
S.S. Joe Burford, Inc. Monterville, WV	32,349	130,814	163,163	36	61	97
Gamble Coals, Inc. Huttonsville, WV	128,131	0	128,131	65	0	65
Roaring Creek Coal Co. Elkins, EV	0	90,306	90,306	0	20	20
Demotto-Peerless Coal Co. Pickins, WV	75,191	0	75,191	46	0	46

WEST VIRGINIA LAND-MINERAL OWNERS

RANDOLPH COUNTY, 1974

Owners (Parent Company)	Acres Owned
Mower Lumber Co.	59,787
Neva S. McMullen	25,000
Coastal Lumber Co.	21,070
J.M. Huber Corp.	19,635
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	15,230
Davis Elkins, *et al*.	14,309
Island Creek Coal Co. (Occidental Petroleum Co.)	12,772
Sun Lumber Co.	6,000
Pardee & Curtin Lumber Co.	3,406
Georgia-Pacific Corp.	2,810
Total:	180,019
Total Acres in County:	492,133

Source: Tom D. Miller, *Who Owns West Virginia?* (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

SUMMERS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	3,531	0.004	5	0.010
Surface	0	0	0.000	0	0.000
Total:	2	3,531	0.003	5	0.008

Production Ranking of County: 34

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Greenbrier Mining Co. Rainelle, WV	3,125	0	3,125	5	0	5
Mountain Resources Rainelle, WV	407	0	407	0	0	0

WEST VIRGINIA 1976

TAYLOR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	8	227,227	1.1	93	1.2
Total:	8	227,227	0.2	93	1.2

Production Ranking of County: 28

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Grafton Coal Company Clarksburg, WV	0	69,565	69,565	0	17	17
C & P Coal Company Clarksburg, WV	0	38,821	38,821	0	18	18
Thompson Coal & Constr. Co. Bridgeport, WV	0	35,333	35,333	0	16	16
West Virginia Fuels, Inc. Clarksburg, WV	0	32,640	32,640	0	6	6
Y & R Coal Company Clarksburg, WV	0	23,081	23,081	0	16	16

WEST VIRGINIA LAND-MINERAL OWNERS

TAYLOR COUNTY, 1974

Owner (Parent Company)	Acres Owned
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	27,710
Richard King Mellon Foundation	19,902
Union National Bank of Clarksburg (Trustee)	10,676
Parkersburg National Bank (Trustee)	6,442
Brownton Fuel Co.	2,695
Total:	67,425
Total Acres in County:	113,401

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

TUCKER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	10	364,706	1.7	56	0.7
Total:	10	364,706	1.3	56	0.1

Production Ranking of County: 26

Projected Production Increase by 1985:
0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Douglas Coal Company Elkins, WV	0	211,954	211,954	0	30	30
Davis Trucking Co., Inc. Bayard, WV	0	152,752	152,752	0	26	26

WEST VIRGINIA LAND-MINERAL OWNERS

TUCKER COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	49,929
West Virginia Power & Transmission Co.	22,280
Island Creek Coal Co. (Occidental Petroleum Co.)	6,584
The Baltimore Co.	4,031
Monongalia Power Co.	2,775
Baird Catzmer Corp.	1,719
Allegheny Properties, Inc.	1,718
Frazee Lumber Co.	--
Eastern Associated Coal Corp. (Eastern Gas & Fuel Associates)	397
Total:	94,083
Total Acres in County:	176,031

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

UPSHUR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	7	949,022	1.1	341	0.7
Surface	21	453,697	2.2	321	4.0
Total:	28	1,402,719	1.3	662	1.1

Production Ranking of County: 18

Projected Production Increase by 1985: 1.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Bethlehem Mines Corp. (Bethlehem Steel Corp.)	650,903	0	650,903	138	0	138
Upsure Coals Corp. (Alco Standard, Inc.)	209,941	0	209,941	120	0	120
D.L.M. Coal Corp. (General Energy Co.)	0	131,750	131,750	0	106	106
Pierce Coal Company Weston, WV	34,944	20,800	55,744	17	20	37
B & B Coal Company Delbarton, WV	0	52,980	52,980	0	24	24

WEST VIRGINIA LAND-MINERAL OWNERS

UPSHUR COUNTY, 1974

Owner (Parent Company)	Acres Owned
Superior Coal Co.	51,466
LaRosa Fuel Co.	47,608
William H. Bargelok, Jr.	16,745
Bethlehem Steel Corp.	10,243
Buckhannon Coal Corp.	8,229
Sun Lumber Co.	8,205
Wesley O'Dell	7,165
J.M. Huber Corp.	4,978
Willis G. Tetrick, Jr.	3,687
Coastal Lumber Co.	3,623
Joyce Properties	3,097
Island Creek Coal Co. (Occidental Petroleum Co.)	2,682
Cabot Corp.	2,421
Total:	170,149
Total Acres in County:	227,110

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

WAYNE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	494,250	0.56	189	0.37
Surface	0	0	0.00	0	0.00
Total:	2	494,250	0.45	189	0.32

Production Ranking of County: 24

Projected Production Increase by 1985: 2.2 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Buffalo Mining Company (The Pittston Co.)	358,287	0	358,287	156	0	156
Goff Brothers Coal Co. Kermit, WV	135,963	0	135,963	33	0	33

WEST VIRGINIA LAND-MINERAL OWNERS

WAYNE COUNTY, 1974

Owner (Parent Company)	Acres Owned
Columbia Gas System	20,000
Cabot Corp.	17,202
Wayne County Land & Mineral Co.	13,659
Prichard Estate	12,769
Ashland Oil Co.	11,536
Southern West Virginia Oil & Gas Co.	5,140
Glenhayes Company	3,694
Hoard Baldwin Land Co.	3,337
First National Bank of Cincinnati	2,617
Preston Oil Co.	1,135
Total:	91,089
Total Acres in County:	331,443

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

WEBSTER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	23	213,145	0.2	120	0.2
Surface	12	303,149	1.4	176	2.2
Total:	35	516,294	0.5	296	0.5

Production Ranking of County: 23

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Peaker Run Coal Co., Inc. Webster Springs, WV	0	196,870	196,870	0	67	67
Spring Ridge Coal Co. Webster Springs, WV	83,660	0	83,660	27	0	27
Bergoo Coal Company (Unidyne, Inc.)	77,746	0	77,746	28	0	28
Energy Producers, Inc. Lost Creek, WV	0	34,621	34,621	0	35	35
Big Valley Coal Co., Inc. Bolair, WV	32,807	0	32,807	11	0	11

WEST VIRGINIA LAND-MINERAL OWNERS

WEBSTER COUNTY, 1974

Owner (Parent Company)	Acres Owned
Chessie System	71,731
Pardee and Curtin Lumber Co.	71,621
Sun Lumber Co.	35,882
Georgia-Pacific Corp.	33,084
Total:	212,322
Total Acres in County:	292,777

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

WETZEL COUNTY, 1974

Owner (Parent Company)	Acres Owned
Atlantic Ritchfield Co.	61,036
Consolidation Coal Co. (Continental Oil Co.)	58,465
Chessie System	34,652
Wheeling Dollar Savings & Trust	3,223
Charleston National Bank	2,304
Total:	159,680
Total Acres in County:	230,700

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

WRIT COUNTY, 1974

Owner (Parent Company)	Acres Owned
Westvaco Corp.	38,976
Glen Roberts	29,437
Cabot Corp.	18,369
Union National Bank of Clarksburg	9,892
N.M. Welch	6,962
Total:	103,636
Total Acres in County:	150,022

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA 1976

WYOMING COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	119	8,224,163	9.4	6,402	12.4
Surface	15	471,236	2.3	248	3.1
Total:	134	8,695,399	8.0	6,650	11.1

Production Ranking of County: 4

Projected Production Increase by 1985: 4.6 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Eastern Assoc. Coal Corp. (Eastern Gas & Fuel Assoc.)	1,774,454	0	1,774,454	1,565	0	1,565
Itmann Coal Company Consolidation Coal Co. (Continental Oil Co.)	1,018,733 618,291 1,637,024	0 0	1,018,733 618,291 1,637,024	1,165 493 1,658	0 0	1,165 493 1,658
Island Creek Coal Co. (Occidental Petroleum Corp.)	935,302	0	935,302	555	0	555
U.S. Steel Corp. (U.S. Steel Corp.)	775,099	0	775,099	467	0	467
Ranger Fuel Corp. (The Pittston Co.)	429,334	39,005	468,339	494	42	536

WEST VIRGINIA LAND-MINERAL OWNERS
WYOMING COUNTY, 1974

Owner (Parent Company)	Acres Owned
N & W Railway Co.	210,719
Georgia-Pacific Corp.	115,432
Chessie System	21,796
Youghiogheny & Ohio Coal Co.	28,926
Pardee Land Co.	6,133
Consolidation Coal Co. (Continental Oil Co.)	2,647
Berwind Corp.	2,389
Total:	388,042
Total Acres in County:	324,672

Source: Tom D. Miller, Who Owns West Virginia? (Huntington, WV: Huntington Publishing Co., 1975). Copyright (c) The Huntington Publishing Co.

WEST VIRGINIA LAND-MINERAL OWNERS

WYOMING COUNTY, 1968

Owner (Parent Company)	Acres Owned			
	Fee	Surface	Mineral/ Timber	Total
Pocahontas Land Co. (Norfolk & Western Railroad)	26,963	86,990	99,978	129,231
Georgia-Pacific Corp.	42,906	28,641	22,038	93,585
Youghiogheny & Ohio Coal Co.	--	63	28,915	28,978
Western Pocahontas Corp. (C&O Railroad)	13,998	--	2,079	16,077
Winding Gulf Coals, Inc. (Penn-Virginia/Westmoreland Coal)	5,162	77	863	6,102
Consolidation Coal Co. (Continental Oil Co.)	2,529	7	217	2,753
Berwind Corp.	2,117	--	230	2,347
Totals:	93,675	115,778	154,320	279,055
Total Acres in County: 324,480				

Source: J. Davitt McAteer, Coal Mine Health and Safety: The Case of West Virginia (New York: Praeger Publishers, 1973). Copyright (c) by J. Davitt McAteer. Reproduced by permission of Holt, Rinehart and Winston.

ALABAMA 1976

BIBB COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	5	184,832	1.4	83	1.3
Total:	5	184,832	0.9	83	0.7

Production Ranking of County: 13

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Black Diamond Coal Co. (Burgess Min. & Constr. Co.)	0	104,951	104,951	0	0	0
Burgess Min. & Constr. Co. Birmingham, AL	0	37,014	141,965	0	61	61
Davis, Terrell, Killian & Associates West Blocton, AL	0	38,936	38,936	0	16	16

ALABAMA 1976

BLOUNT COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	13,200	0.2	36	0.7
Surface	20	762,541	5.6	474	7.5
Total:	21	775,741	3.7	510	4.4

Production Ranking of County: 5

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Calvert-Marsh Coal Co. Oneonta, AL	0	283,919	283,919	0	105	105
Taylor Coal Co. Jasper, AL	0	179,830	179,830	0	95	95
Calvert-Youngblood Coal Co. Pinson, AL	0	88,639	88,639	0	42	42
N.M. & N. Coal Co. Gardendale, AL	0	37,934	37,934	0	60	60
Sauls Mining Corp.	0	35,848	35,848	0	25	25

ALABAMA 1976

CHEROKEE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	6	62,375	0.5	86	1.4
Total:	6	62,375	0.3	86	0.8

Production Ranking of County: 16

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Howton Coal Co. Birmingham, AL	0	22,596	22,596	0	21	21
Cherokee Mining Co. Birmingham, AL	0	15,000	15,000	0	11	11
McKie Coal Co., Inc. Ft. Payne, AL	0	13,871	13,871	0	31	31

ALABAMA 1976

CULLMAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	20	732,082	5.4	351	5.6
Total:	20	732,082	3.5	351	3.1

Production Ranking of County: 7

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
King Coal Co., Inc. Birmingham, AL	0	276,449	276,449	0	114	114
The Drummond Co., Inc. (The Drummond Co.)	0	173,881	173,881	0	64	64
Taylor Coal Co., Inc. Jasper, AL	0	153,381	153,381	0	74	74
Bailey Coal Co., Inc. Cullman, AL	0	27,439	27,439	0	6	6
Trimble Contracting Co. Cullman, AL	0	22,582	22,582	0	7	7

ALABAMA 1976

DEKALB COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	15	280,342	2.1	363	5.8
Total:	15	280,342	1.3	363	3.2

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Yancey & Yancey Constr. Co. Albertville, AL	0	71,836	71,836	0	38	38
Thomas Duckett Constr. Inc. Albertville, AL	0	44,825	44,825	0	21	21
Inversco International, Inc. Ft. Payne, AL	0	28,636	28,636	0	36	36
Hoover, Inc. Nashville, TN	0	20,038	20,038	0	43	43
Vulcan Energy Resources	0	18,323	18,323	0	60	60

ALABAMA 1976

ETOWAH COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	2	24,222	0.2	13	0.2
Total:	2	24,222	0.1	13	0.1

Production Ranking of County: 17

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
North Star Coal College Park, GA	0	20,000	20,000	0	10	10
Rockcastle Company Gadsden, AL	0	4,222	4,222	0	3	3

ALABAMA 1976

FAYETTE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	1	736,105	10.0	465	8.9
Surface	4	257,562	1.9	132	2.1
Total:	5	993,667	4.7	597	5.2

Production Ranking of County: 4

Projected Production Increase by 1985: 2 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Republic Steel Corp. (Republic Steel Corp.)	736,105	0	736,105	465	0	465
Berry Coal Company	0	127,414	127,414	0	28	28
Taylor Coal Co., Inc. Jasper, AL	0	96,040	96,040	0	79	79
Southern Coal Mining, Inc. Birmingham, AL	0	29,456	29,456	0	13	13
Crawford Coal Co., Inc. Cottondale, AL	0	4,652	4,652	0	12	12

ALABAMA 1976

FRANKLIN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	11	203,478	1.5	122	1.9
Total:	11	203,478	1.0	122	1.1

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Trapp Coal Company Phil Campbell, AL	0	81,744	81,744	0	30	30
Winston Mining Company Lynn, AL	0	74,638	74,638	0	35	35
Margo Coal Company Jasper, AL	0	18,606	18,606	0	10	10

ALABAMA 1976

JACKSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	29,114	0.4	11	0.2
Surface	5	613,238	4.5	199	3.2
Total:	7	642,352	3.1	210	1.8

Production Ranking of County: 8

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Robertson & Associates, Inc. (Robertson & Associates)	0	597,425	597,425	0	172	172
Ten-Al Coal Co., Inc. Tracy City, TN	25,655	0	25,655	9	0	9

ALABAMA 1976

JEFFERSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	13	4,690,307	63.5	3,605	68.9
Surface	28	2,413,994	17.7	850	13.5
Total:	41	7,104,301	33.7	4,455	38.7

Production Ranking of County: 1

Projected Production Increase by 1985: 7.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Alabama By-Products Corp. Birmingham, AL	1,928,166	0	1,928,166	1,105	0	1,105
U.S. Steel Corp.-South Dist. Mining (U.S. Steel Corp.)	1,288,520	0	1,288,520	935	0	935
The Drummond Company	0	653,063	653,063	0	128	128
Hallmark Coal Co., Inc.	0	198,704	198,704	0	53	53
(The Drummond Company)		851,767	851,767		181	181
Jim Walter Resources, Inc. Birmingham, AL	757,385	0	757,385	862	0	862
Mead Coal (Mead Corporation)	600,209	0	600,209	567	0	567

ALABAMA 1976

LAMAR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	1	68,674	0.5	38	0.6
Total:	1	68,674	0.3	38	0.3

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Lakeside Coal Co. Jasper, AL	0	68,674	68,674	0	38	38

ALABAMA 1976

MARION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	14,502	0.2	18	0.3
Surface	23	727,629	5.3	416	6.6
Total:	25	742,131	3.5	434	3.7

Production Ranking of County: 6

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Coalite, Inc. (Great Northern Nekoosa Corp.)	0	161,183	161,183	0	79	79
Taylor Coal Co., Inc. Jasper, AL	0	160,866	160,866	0	84	84
Lakeside Coal Co., Inc. Jasper, AL	0	108,012	108,012	0	72	72
J.D.J. Mining Corp. Brilliant, AL	0	44,538	44,538	0	21	21
Allen Coal Company Hamilton, AL	0	39,865	39,865	0	8	8

ALABAMA 1976

SHELBY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	4	477,438	3.5	175	2.8
Total:	4	477,438	2.1	175	1.5

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION Underground	PRODUCTION Surface	PRODUCTION Total	EMPLOYMENT Underground	EMPLOYMENT Surface	EMPLOYMENT Total
Burgess Mining & Constr. Corp.	0	263,222	263,222	0	99	99
Black Diamond Coal Mining Co.	0	35,147	35,147	0	--	--
(Burgess Mining & Constr. Corp.)		298,369	298,369		99	99
Sullivan Long-Hagerty Coal Co., Inc. Birmingham, AL	0	170,525	170,525	0	65	65
Walliston Coal Co., Inc.	0	8,544	9,544	0	11	11

ALABAMA 1976

ST. CLAIR COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	14	100,682	0.7	122	1.9
Total:	14	100,682	0.5	122	1.1

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Rosa Minerals, Inc. Cleveland, AL	0	23,509	23,509	0	28	28
M.T. Mining Co., Inc. Leeds, AL	0	28,121	28,121	0	56	56
Robinson Coal Co. Birmingham, AL	0	19,753	19,753	0	15	15
Rickey Coal Co. Cropwell, AL	0	17,336	17,336	0	8	8

ALABAMA 1976

TUSCALOOSA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	00.0
Surface	21	2,458,012	0.2	835	13.3
Total:	21	2,458,012	0.1	835	7.2

Production Ranking of County: 3

Projected Production Increase by 1985: 8.4 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
The Drummond Company, Kellerman Division Jasper, AL	0	1,001,126	1,001,126	0	302	302
Mitchell-Neely, Inc.	0	383,616	383,616	0	80	80
Abston Construction Co. Brookwood, AL	0	244,264	244,264	0	62	62
Peabody Coal Co. (Peabody Holding Co.)	0	188,495	188,495	0	85	85
Brookwood Equipment Co., Inc. Brookwood, AL	0	174,075	174,075	0	56	56

ALABAMA 1976

WALKER COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	1,909,176	25.8	1,098	21.0
Surface	55	3,765,974	27.6	1,694	26.9
Total:	58	5,675,150	26.9	2,792	24.2

Production Ranking of County: 2

Projected Production Increase by 1985: 2.85 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Alabama By-Products Corp. Birmingham, AL	1,909,176	0	1,909,176	1,098	0	1,098
Bankhead Mining Co.	0	485,263	485,263	0	320	320
Cobb Coal Co.	0	594,173	594,173	0	396	396
(Bankheading Mining Co.)		1,079,436	1,079,436		716	716
The Drummond Co. Jasper, AL	0	536,332	536,332	0	175	175
Walker-Fayette Coal Co. (Arch Minerals)	0	511,557	511,557	0	73	73
Peabody Coal Co. (Peabody Holding Co.)	0	203,813	203,813	0	82	82

ALABAMA 1976

WINSTON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	0.0	0	0.0
Surface	19	537,675	3.9	340	5.4
Total:	19	537,675	2.5	340	3.0

Production Ranking of County: 9

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Coalite, Inc. (Great Northern Nekoosa Corp.)	0	152,288	152,288	0	79	79
The Drummond Company Jasper, AL	0	100,089	100,089	0	51	51
Westala Coal Company Oneonta, AL	0	61,691	61,691	0	17	17
Westco, Inc. Jasper, AL	0	37,771	37,771	0	12	12
Trapp Coal Company Phil Campbell, AL	0	36,356	36,356	0	20	20

GEORGIA 1976

CHATTOOGA COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0			
Surface	3	186,000	100.0	100	100.0
Total:	3	186,000	100.0	100	100.0

Production Ranking of County: 1

Projected Production Increase by 1985: 1.5 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Lookout Mountain Coal Co. Menio, GA	0	186,000	186,000	0	100	100

MARYLAND 1976

ALLEGANY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	0	0	00.0	0	00.0
Surface	47	972,235	38.6	290	44.5
Total:	47	972,235	36.0	290	41.2

Production Ranking of County: 2

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Winner Bros. Coal Co. Frostburg, MD	0	155,239	155,239	0	50	50
Phillips Coal, Inc. (Kaneb Services)	0	134,848	134,848	0	48	48
T. G. & C. Coal Co., Inc. Midlothian, MD	0	108,658	108,658	0	49	49
Delta Mining, Inc. (Cerro Corp.)	0	80,633	80,633	0	6	6
Union Coal Co., Inc. Barton, MD	0	73,922	73,922	0	24	24

MARYLAND 1976

GARRETT COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	175,016	100.0	53	100.0
Surface	65	1,547,928	61.4	361	55.5
Total:	67	1,722,944	63.9	414	58.8

Production Ranking of County: 1

Projected Production Increase by 1985: 2.0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Buffalo Coal Co., Inc. Bayard, WV	0	253,611	253,611	0	80	80
Delta Mining, Inc. (Cerro Corp.)	0	188,527	188,527	0	30	30
Westmoreland Resources, Inc.	0	172,287	172,287	0	37	37
Grafton Coal Co. Clarksburg, WV	0	162,384	162,384	0	39	39
Hampshire Mining Corp. Keyser, WV	150,147	0	150,147	41	0	41

TENNESSEE 1976

ANDERSON COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	22	1,337,488	18.0	426	13.6
Surface	5	332,397	21.2	67	17.8
Total:	27	1,695,885	18.8	493	14.1

Production Ranking of County: 1

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Volunteer Mining Corp. Devonia, TN	271,166	0	271,166	44	0	44
Oliver Springs Mining Co. Oliver Springs, TN	254,325	0	254,325	63	0	63
Walnut Mountain, Inc. Devonia, TN	0	174,063	174,063	0	22	22
Jackson Mining Co., Inc. Oliver Springs, TN	110,191	0	110,191	23	0	23
Tenn-Tex Coal Corp. Lake City, TN	84,198	0	84,198	52	0	52

TENNESSEE 1976

BLEDSOE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	6	147,691	2.0	51	1.6
Surface	0	0	0.0	0	0.0
Total:	6	147,691	1.6	51	1.5

Production Ranking of County: 9

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Lucky Cumberland Coal Co. Dunlap, TN	50,000	0	50,000	10	0	10
Sequatchie Valley Coal Corp. Pikeville, TN	37,724	0	37,724	20	0	20
Pioneer Coal Co. Pikeville, TN	28,107	0	28,107	10	0	10
Catawba Energy Co., Inc. Dunlap, TN	17,000	0	17,000	4	0	4
Cole & Watts Coal Co. Crossville, TN	10,000	0	10,000	3	0	3

TENNESSEE 1976

CAMPBELL COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	31	1,477,155	19.9	608	19.5
Surface	5	142,936	9.1	54	14.3
Total:	36	1,620,091	18.0	662	18.9

Production Ranking of County: 2

Projected Production Increase by 1985: .8 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Long Pit Mining Co. Harriman, TN	384,936	0	384,936	108	0	108
P & H Equipment Co., Inc. Oneida, TN	157,230	0	157,230	57	0	57
McCall Enterprises, Inc. Careyville, TN	155,863	0	155,863	19	0	19
Dan Branch Mining Co. Jacksboro, TN	100,000	0	100,000	80	0	80
Ewell Spradlin Coal Co. LaFollette, TN	0	86,572	86,572	0	15	15

TENNESSEE 1976

CLAIBORNE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	6	1,032,848	13.9	527	16.9
Surface	3	294,332	18.8	46	12.2
Total:	9	1,327,180	14.7	573	16.4

Production Ranking of County: 3

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Consolidation Coal Co. (Continental Oil Co.)	866,101	0	866,101	450	0	450
Four Leaf Coal Co. Clairfield, TN	0	157,286	157,286	0	25	25
S.A.M. Coal Corp. Middlesboro, KY	0	112,771	112,771	0	16	16
Double Q. Inc. Clairfield, TN	91,555	0	91,555	42	0	42
Royal Gem Coal Co. Clairfield, TN	62,172	0	62,172	4	0	4

TENNESSEE 1976

CUMBERLAND COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	3	113,645	1.5	24	0.8
Surface	0	0	0.0	0	0.0
Total:	3	113,645	1.3	24	0.7

Production Ranking of County: 10

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Lonpee Mining Co. Oneida, TN	94,000	0	94,000	10	0	10
Wild Cat Enterprises, Inc. Sparta, TN	10,645	0	10,645	6	0	6
Clifty Mining Company Monterey, TN	9,000	0	9,000	8	0	8

TENNESSEE 1976

FENTRESS COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	9	303,987	4.1	87	2.8
Surface	1	187,561	11.9	59	15.6
Total:	10	491,548	5.5	146	4.2

Production Ranking of County: 8

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
F & H Equipment Co. Oneida, TN	0	187,561	187,561	0	59	59
D & H Coal Co., Inc. Jamestown, TN	139,801	0	139,801	34	0	34
Big G Coal Company Oneida, TN	95,320	0	95,320	19	0	19

TENNESSEE 1976

GRUNDY COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	52,622	0.7	21	0.7
Surface	0	0	0.0	0	0.0
Total:	4	52,622	0.6	21	0.6

Production Ranking of County: 14

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Russell Mining Company Tracy City, TN	26,024	0	26,024	2	0	2
H & L Coal Company Tracy City, TN	13,417	0	13,417	8	0	8
Four Seasons Coal Co., Inc. Wartburg, TN	12,181	0	12,181	9	0	9
Hurd Coal Company Dunlap, TN	1,000	0	1,000	2	0	2

TENNESSEE 1976

MARION COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	16	538,108	7.2	254	8.1
Surface	0	0	0.0	0	0.0
Total:	16	538,108	6.0	254	7.3

Production Ranking of County: 7

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Grundy Mining Company Tracy City, TN	272,415	0	272,415	125	0	125
Virginia Mining Co. Jasper, TN	65,732	0	65,732	25	0	25
Earl Patton Coal Co. Dunlap, TN	50,082	0	50,082	11	0	11
Marion Coal Company Tracy City, TN	31,128	0	31,128	10	0	10

TENNESSEE 1976

MORGAN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	9	410,448	5.5	173	5.5
Surface	7	254,362	16.2	65	17.2
Total:	16	664,810	7.4	238	6.8

Production Ranking of County: 6

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Shamco, Inc. Oliver Springs, TN	200,191	0	200,191	31	0	31
Longwa Coal Company Oneida, TN	99,000	0	99,000	19	0	19
Lewis Coal Company Helenwood, TN	0	84,048	84,048	0	17	17
B & W Auger Company Emory Gap, TN	0	72,748	72,748	0	17	17

TENNESSEE 1976

OVERTON COUNTY

	Mines	Production	Production	Employment	% of State Employment
Underground	1	32,995	0.4	29	0.9
Surface	0	0	0.0	0	0.0
Total:	1	32,995	0.4	29	0.8

Production Ranking of County: 15

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Clear Creek Coal Co. Tulsa, OK	32,995	0	32,995	29	0	29

TENNESSEE 1976

PUTNAM COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	111,094	1.5	53	1.7
Surface	0	0	0.0	0	0.0
Total:	2	111,094	1.2	53	1.5

Production Ranking of County: 11

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Clear Creek Coal Co. Tulsa, OK	94,392	0	94,392	43	0	43

TENNESSEE 1976

ROANE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	2	34,511	0.5	9	0.3
Surface	1	32,080	2.0	6	1.6
Total:	3	66,591	0.7	15	0.4

Production Ranking of County: 13

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Coalco, Inc. Harriman, TN	0	32,080	32,080	0	6	6
Little T Coal Co. Ten Mile, TN	25,000	0	25,000	6	0	6
Whisco, Inc. Ten Mile, TN	9,511	0	9,511	3	0	3

TENNESSEE 1976

SCOTT COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	36	1,052,773	14.2	499	16.0
Surface	4	221,932	14.1	59	15.6
Total:	40	1,274,705	14.2	558	15.9

Production Ranking of County: 4

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
[illegible], Inc. Oneida, TN	220,260	0	220,260	47	0	47
Cumberland Coal Corp. Oak Ridge, TN	51,061	102,757	153,818	25	26	51
Lone Mountain Coal Co. Oneida, TN	110,065	0	110,065	57	0	57
Laco, Inc. Oliver Springs, TN	0	110,021	110,021	0	26	26
Helenwood Excavating Co. Helenwood, TN	85,900	0	85,900	24	0	24

TENNESSEE 1976

SEQUATCHIE COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	9	678,043	9.1	335	10.7
Surface	1	112,859	7.2	21	5.6
Total:	10	790,902	8.8	356	10.2

Production Ranking of County: 5

Projected Production Increase by 1985: 1.3 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
Grundy Mining Co., Inc. Tracy City, TN	372,845	0	372,845	210	0	210
Walden Ridge Coal Co. (Sequatchie Valley Coal Corp.)	41,409	112,859	154,268	20	21	41
Southern Energy Resources (Marquette Company)	73,639	0	73,639	23	0	23
Chestnut Coal Co. Jasper, TN	66,771	0	66,771	25	0	25
Mary Lee Coal Co. Tracy City, TN	61,000	0	61,000	16	0	16

TENNESSEE 1976

VAN BUREN COUNTY

	Number Mines	Coal Production	% of State Production	Coal Employment	% of State Employment
Underground	4	108,080	1.5	28	0.9
Surface	0	0	0.0	0	0.0
Total:	4	108,080	1.2	28	0.8

Production Ranking of County: 12

Projected Production Increase by 1985: 0 million tons

Major Coal Company(ies) (Parent Company)	PRODUCTION			EMPLOYMENT		
	Underground	Surface	Total	Underground	Surface	Total
M.C. Anderson Co. Dunlap, TN	103,450	0	103,450	21	0	21
Dunlap Coal Co. Dunlap, TN	3,000	0	3,000	2	0	2
Van Buren Mining Co. Pikeville, TN	1,230	0	1,230	2	0	2
Dunwoody Coal Co. Spencer, TN	400	0	400	3	0	3